



3 1761 11894384 4

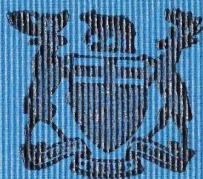
A24N
HY 800
14P76

PUBLIC ROADS


AND

HIGHWAYS

ONTARIO



REPORT OF THE COMMISSIONERS
1914

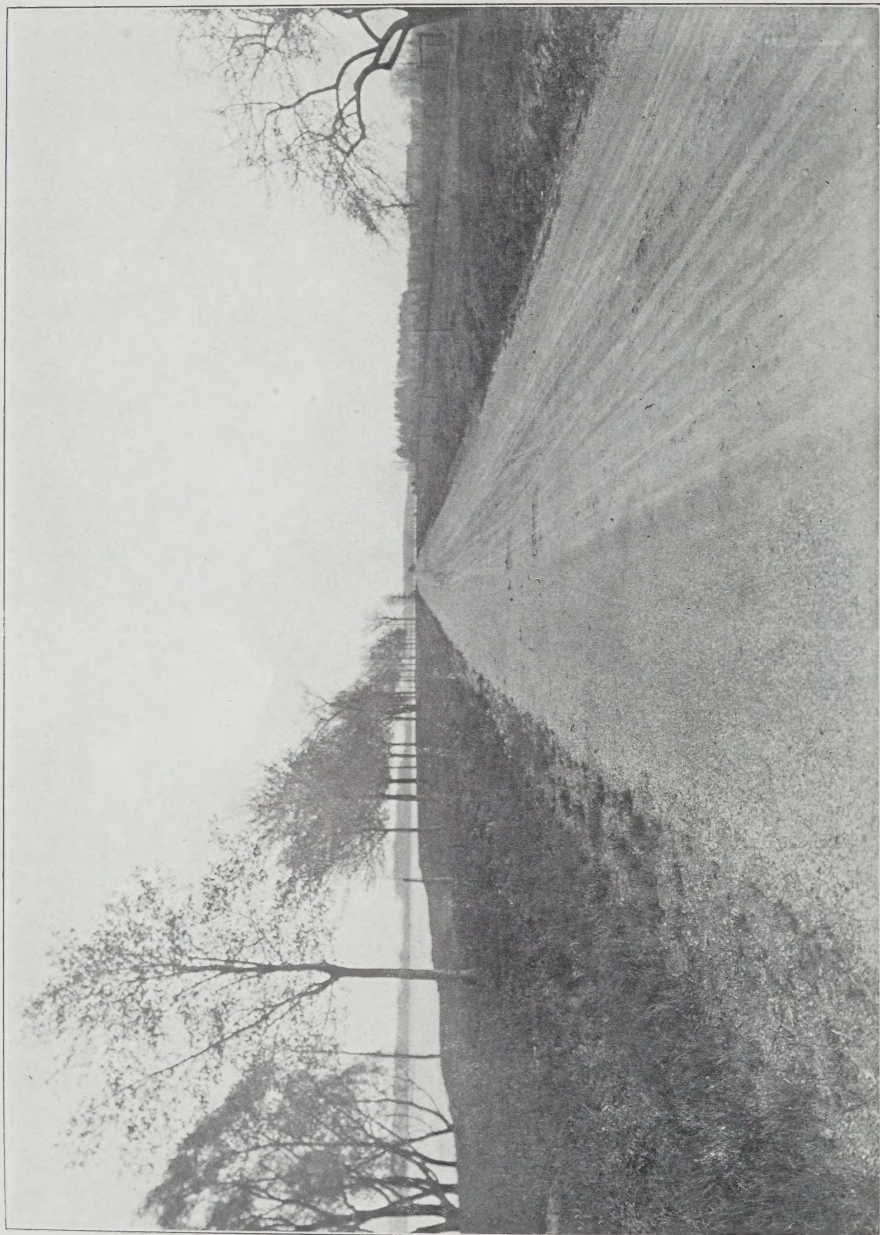


Digitized by the Internet Archive
in 2024 with funding from
University of Toronto

<https://archive.org/details/31761118943844>

Ontario [Commissions and
Committee of inquiry] Public
Roads and highway Commission.
Report

1914



On the Niagara River Boulevard.

REPORT
OF THE
PUBLIC ROADS
AND
HIGHWAYS COMMISSION
OF
ONTARIO
1914

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO



TORONTO :
Printed and Published by L. K. CAMERON, Printer to the King's Most Excellent Majesty
1914



Printed by
WILLIAM BRIGGS,
29-37 Richmond Street West,
TORONTO.

TABLE OF CONTENTS

	PAGE
FINDINGS AND RECOMMENDATIONS OF THE COMMISSION.....	7

APPENDICES—

No. 1 (a) Agricultural Interests.	33
(b) The City and Roads.....	37
“ 2 Municipal and other Resolutions presented to the Commission.....	50
“ 3 Summary of Evidence presented to the Commission.....	72
“ 4 Road Mileage Tables	76
“ 5 Traffic Census Tables	87
“ 6 Analysis of Automobile Registration in the Province of Ontario for year ended December 31st, 1913.....	100
“ 7 Supporting Areas of Ontario Cities.....	108
“ 8 Postal Routes.	111
“ 9 Compendium of Highway Organization in Canada and the United States....	114
“ 10 An Historical Sketch of Road Development in Ontario.....	157
“ 11 Township Roads — Statute Labour and Expenditures.....	188
“ 12 Road Improvement and Land Values.....	200
“ 13 Memorandum on Assessment in Ontario.....	208
“ 14 Data for Chart of Farm Production.....	217
“ 15 Toll Roads.	221
“ 16 Note on Report on Location of Road Material.....	222
“ 17 Urban Municipalities of Ontario, arranged in order of Density of Population.	223
“ 18 Township Road Expenditure, 1900, 1905, 1910.....	228

ILLUSTRATIONS—

On the Niagara River Boulevard.....	frontispiece
Dundas Street.....	facing page 22
The Plains Road in Wentworth County; Hill-cutting in Carleton County.....	60
Road Construction Camp and Gravel Road in Lennox and Addington.....	64
Concrete Bridge in Markham Township, York County; Concrete Road Construc- tion at Sarnia.	74
Gravel Road; Macadam Construction, Massachusetts	118
Gravel Road; Bituminous Surface Treatment, Massachusetts	120
Patrolmen's Wagon; Broken Stone Road, New York State.....	124
Macadamized Road in Winchester; Kingston Road in York County.....	178
Reinforced Concrete Arch, York County; Broken Stone Road, Frontenac County.	222

TABLE OF CONTENTS—Continued

CHARTS—

	PAGE
Suggested Classification of Permanent Roads.....	28
"Cost of Hauling" Diagram.....	39
Plate A.—Total acreages cleared and under crop, 1904-1913.....	41
Plates B. to X.—Total acreages of farm produce, 1904-1913.....	42-46
Plate Y. (1) and (2).—Acreages necessary to supply local demand and surplus thereover.	47, 48
Plate Z.—Stock, hay and pasture chart, 1903-1913.....	49
Highway Organization Chart of the State of Massachusetts.....	121
Highway Organization Chart of the State of New York.....	127
Highway Organization Chart of the State of California.....	151
Highway Organization Chart of the State of New Jersey.....	159
Chart of Farm Production.....	218
Variations in Costs of Foods as compared with other Commodities in Canada, 1902-1912.	220

MAPS AND PLANS—

(Contained in pocket of Report.)

1. Distribution of Population, 1911.
2. Distribution of Agricultural Production, 1911.
3. Increases and Decreases in Agricultural Production, 1901-1911.
4. Supporting Areas of Cities.
5. Map of Upper Canada, 1821.

TO HIS HONOUR,

THE LIEUTENANT-GOVERNOR IN COUNCIL:

The undersigned members of the Public Roads and Highways Commission, appointed by commission bearing date the 31st of July, 1913, have the honour to submit the following Report respecting matters upon which inquiry was authorized and directed.

Your Commissioners must make it clear that they regard their position as that of a temporary body, designed to make a preliminary survey of a subject at once of enormous importance to the people of this Province, of vast proportions and far-reaching ramifications, and of a nature not susceptible to a too hasty laying down of complete and minutely specified proposals. As will be explained on a later page, it is the view of Your Commissioners that a more permanent advisory commission, designed to study technical policy—as opposed to general policy, which must remain in the hands of the Legislature and Your Honour's advisers—might be of service, and this advisory commission might later, when certain investigation which Your Commissioners are about to suggest have been carried through, profitably assist the Minister in the formulation of a detailed plan.

For the time being, Your Commissioners deem it proper to limit their report to certain proposals for preliminary organization and investigation, and to the advancing of certain considerations and suggestions.

I.

Your Commissioners desire at the outset to lay before Your Honour certain general ideas with the importance of which they have been impressed in the course of their study of the subject. If the Province of Ontario is to grapple successfully with this problem, they are persuaded that effort must run along these lines.

First.—Your Commissioners are convinced that the cities must co-operate with the country districts in procuring the blessing of good roads. They are aware that the opinion is frequently advanced in the cities that to provide good roads is peculiarly and indeed exclusively the farmer's business; but consideration of the subject has led them to a different conclusion, which will be maintained in a subsequent page of this report.

Secondly.—Your Commissioners believe that there is impending a revolution in farm operations. Two centuries ago or less the European farmer used the pack-horse to take his products to market. A revolution in methods occurred, and he came to employ wagons, which were hauled along roads much better than the tracks his ancestors had known. The self-propelled vehicle has come to stay, and Your Commissioners are convinced that the successful solution of the problem of good roads in some part depends upon a recognition of that fact. Indeed, the motor, to no small extent, creates the problem, for it has proved so destructive to main highways which resisted the wear and tear of horse-drawn vehicles, that means must be devised to guard against a deterioration, which now proceeds with a rapidity formerly unknown. The motor vehicle, in short, cannot be ignored in a consideration of the subject.

More than that, opportunities as well as difficulties are created by this new method of transportation. It presents some, at least, of the features essential to profitable use by farmers; it conveys loads of a size so moderate that a single farm can furnish one or more than one, yet so large as to out-class the old horse-drawn wagon; it requires, not specialized tracks, like railway, but a common highway, albeit improved to a standard within the reach of the community; it is free from the difficulties of traffic adjustment which have made the conduct of railways a business by itself, and a peculiarly difficult business. In short, it is an individualistic method of transportation, and thus commends itself to farming, the most independent and individualistic occupation in the world. Public attention at present tends to fasten upon the pleasure car, but Your Commissioners find themselves much more interested in those vehicles, some designed for the transportation of passengers, some for the carriage of freight, which they are persuaded before long will be in general use by the farmers of the Province. They suspect, indeed, that the days of the use of the motor car for mere pleasure already are numbered; that in another decade the joy-riding may be done in the air, and the automobile will be relegated to the purposes of sober labour. Already there are cheap motor cars to be obtained; the farmer of to-day can procure one of these with as little straining of his resources as his grandfather could a top-buggy; and it is but reasonable to expect a further lowering of the price. In this beneficent revolution, good roads must play a necessary and important part.

Thirdly.—Your Commissioners have been driven to the conclusion that the subject of good roads is closely associated with questions of taxation and taxation methods. Good roads mean money, and money for public purposes must be furnished by the people, in one form or another. Certain problems are raised by this question of furnishing money, and upon them Your Commissioners will offer certain observations upon a later page.

Fourthly.—Your Commissioners must avow themselves greatly interested in the problem presented by the township roads, those gravel or earth highways which pass the doors of the great mass of farmers and afford them access to the county or market roads, which lead to the centres where they sell their products and make their purchases. Your Commissioners estimate these township roads at eighty-five per cent. of the whole of the highways. This represents an enormous mileage, and this bulk of the problem constitutes an obstacle, the formidable proportions of which Your Commissioners know only too well; but, however great the difficulty, they must assert that in their eyes a principal object of a good roads policy must be the rapid bringing up of these roads, the ones used by the mass of the people, to a fair standard of efficiency. They make this assertion while quite conscious of the fact that certain highways—interurban roads, suburban roads, market roads, and others—are called upon to bear specially heavy traffic and so must be brought up to a special standard. Particular cases of this sort unquestionably must be dealt with and treated with proper regard for efficiency; but Your Commissioners repeat that the great point of attack must be the market roads over which the farmers haul the food products upon which the entire Province lives.

Fifthly.—Your Commissioners must submit a set of considerations glanced at in an earlier paragraph. To instal a perfect system of roads in a Province of such enormous size as Ontario would mean an immense sum of money; a sum which is

Gradual Development.

impossible for us of to-day, but which twenty or thirty years ago would have been a mere incredibility, and which may not seem so impossible twenty or thirty years hence. The revenues of the Province in 1900 were about four millions; they now exceed nine millions, and as the vast resources of the public domain come to be realized, there will be further advances which can be guessed at more easily than calculated upon. The position thus seems to be that there is obtainable now an amount of public money sufficient for a certain expenditure, but inadequate for the huge amounts which could be spent upon so enormous a road mileage as that of Ontario; but that in the future, more ample monetary resources may be at our disposal. For the moment the terms of our problem are the reverse of those of some of our neighbours. The State of New York, for instance, has a restricted area to deal with, a huge population and a limitless purse upon which to draw; the Province of Ontario has an enormous area, a sparse population, and monetary resources which, while not meagre, nevertheless have definite limits. It is because they bear in mind this contrast between present conditions and future expectations that Your Commissioners recommend a policy which they regard as at once within the scope of our present powers and as suitable for expansion should the future bring a day of very large things. They are disposed to bring forward proposals of this nature because from a strictly technical standpoint, the art of road-building is in a state of transition. Until the advent of the high-powered motor car, that art had been fairly mastered; but the motor has created new difficulties which have to be studied, and a final solution of these has yet to be reached. The present is to some extent an era of experiment, and prudence, as well as necessity, counsels the reservation of very large expenditures to a period when more is known about construction methods.

II.

Your Commissioners now put forward their immediate proposals. Their suggestion is that the Province embark upon a definite fifteen years' policy, and establish a form of organization carefully designed to be simple and flexible, and to fit itself into the development of the future. The work to be done, they conceive, should be of a permanent character, but as permanent roadways are constructed, proper measures should be taken to ensure efficient maintenance, and the expenditure on maintenance must grow as a service of this sort is built up. The method to be pursued, they recommend, is the fixing of a certain scale of expenditure during the prescribed period; the devoting of a portion of that sum to the raising of a bond issue whereby considerable capital sums could be obtained at once for permanent work; and the extinguishing of these bonds at a fairly rapid rate, so that they shall not outlast the roads which they will represent. The total capital expenditure which they propose for this period is \$30,000,000, the securities to be issued in instalments as the growing organization is able profitably to spend the money. Allowing for interest and sinking fund outlays, Your Commissioners estimate the annual expenditure upon permanent roadways towards the close of the period at approximately \$2,500,000. This would be, roughly, at the rate of \$1.00 a head for the population of the Province, or about the payment per head in France for the maintenance of a superb system of highways. The money, Your Commissioners believe, should be raised from various sources—Province, Counties, Cities and Towns, and should be expended by various bodies, a cardinal principle being that the people themselves should be as close to the expenditure and the responsibility as possible.

For the expenditure of so large a sum of money, and the conduct of so important, so continuous, and so technical an undertaking, a permanent administrative body is necessary. It should be under a Minister of the Crown, and under

Organization of Good Roads Department.

him should be a permanent head for the administrative work which will be inevitable. A Chief Engineer will be necessary, for a high quality of skilled and scientific work is demanded if the enterprise is to be economically and successfully undertaken. As already noted, Your Commissioners think that in addition there is scope for an unpaid Advisory Commission—comprising three men of affairs, their function being to consult with the Permanent Head, Chief Engineer and Minister, on technical (as distinguished from general) policy, and to assist in interesting the general public in a project which every citizen should regard as his own affair. The proposal is dealt with at length on a later page. The central organization thus established, Your Commissioners suggest that the subordinate service be left to a future date and later experience.

The question now to be faced is how rapidly this scheme can be set on foot. Your Commissioners are of opinion that a satisfactory organization cannot be ready before 1915, and that the coming season should be devoted to a rapid preliminary study of physical conditions. The actual mileage of the

Preliminary Work.

roads has been ascertained, but less is known upon the all-important subject of the available supplies of road-building material. The Dominion Geological Survey, with great kindness, has during the past autumn carried on a partial investigation along lines which will show what qualities and quantities of material are available, and how they are distributed; and we have reason to believe will continue that work during the coming season. The nucleus of the central organization, and the permanent Advisory Commission, if appointed, might with profit prosecute the following lines of investigation:

(1) A motor survey of the main-travelled roads; parties suitably composed might traverse these roads and form an estimate of their present condition and the amount and kind of work necessary to bring them up to a satisfactory standard.

(2) A study of the township roads prosecuted by selected engineers, to determine the condition of the more important ones, with a view to their improvement.

(3) A traffic census designed to give fairly exact information as to the volume of traffic now borne by the highways.

(4) A study of the market roads in counties not now under The Highway Improvement Act, with a view to suggesting to each of such municipalities a suitable system of market roads.

(5) A determination of equitable suburban areas for each city, as suggested herein.

(6) A survey of the proposed Toronto-Hamilton and Ottawa-St. Lawrence Roads; and certain investigations of the Queenston-Hamilton or other roads of a similar character. In this way Your Commissioners are persuaded the ensuing season could be spent in a profitable preparation for the concerted and coherent plan which is to begin in 1915, and to near completion probably in 1930.

Such are certain very broad features of the problem as it appears to Your Commissioners, and such are the outlines of the immediate proposals they have to lay before Your Honour. Conceiving the subject to be one which interlaces itself with the corporate life of the community in innumerable ways, Your Commissioners have set on foot inquiries on a variety of subjects, chiefly relating to the agricultural development of the Province and the use of the roads, some of which may not seem,

at first sight, to have an immediate bearing upon the subject; they venture to represent, however, that these have value in disclosing the ramifications of the interests affected, and in promoting a clearer apprehension of the relations the problem bears to the life of the Province; and to recommend that these inquiries be further prosecuted.

They submit, in the appendices to this report, the results of some of these inquiries. In some cases they constitute a more extended treatment of certain subjects which are merely glanced at in this report. They venture to draw attention to several maps, which set forth in graphic form certain facts about the Province which they believe should be widely known and receive careful attention. One of these is the map showing the movement of population in the decade from 1901 to 1911; and makes it clear that cities must be concerned in the development of rural districts and the support of their road systems. Much interest also attaches to the maps showing the varying productivity of the several portions of the Province, and the estimate of the areas required for the support of the principal centres of population also merits attention.

With these preliminary observations, Your Commissioners proceed to a more detailed examination of a number of subjects which have been briefly touched upon in the foregoing pages.

III.

In this connection Your Commissioners would set forth their views upon the subject of the classification of roads.

The general classification of roads and their division into groups for control are matters of primary importance in dealing with public highways. **Classification of Roads.** The cost of construction and maintenance, and the methods to be applied, are largely in proportion to the amount of traffic on the several roads; and an intelligent classification is basic, in apportioning the cost fairly, and in providing for efficient methods of construction and finance.

The Province of Ontario may be divided as follows:

(a) Well settled areas, about	30,000 sq. miles
(b) Areas containing scattered settlements, or at present available for settlement, about	30,000 " "
(c) Areas likely to remain for many years in a state of nature, but containing wealth in the form of timber, minerals, fisheries, and fur-bearing animals, about	200,000 " "
Total area	260,000 " "

The area of England and Wales, with a population of over 36,000,000, is under 60,000 square miles. Thus the settled area in Ontario, whose road system is the subject of the present inquiry, is about one-half that of England and Wales, and the total arable area whose equipment with roads is a prospect of a measurably near future, is about the same as that of England and Wales.

The closely settled area of Ontario at present is traversed by about 50,000 miles of roads, and in addition there are colonization roads, which the Provincial Government builds in the newer districts to encourage settlement, and often in advance of it. These colonization roads raise a set of problems so diverse from those of the highways of the settled portions of the country that Your Commissioners do not recommend that they be detached from the organization now in

charge of them, and they shall henceforward omit them from the purview of this report. Their main concern is with the 50,000 miles of roadways in the 30,000 square miles of the settled and organized portion of the Province.

To Your Commissioners the highways of Ontario seem to fall into the following divisions:

1. County or Market Roads.—These fall into the following subdivisions:

(a) *Suburban Roads.*—These are close to the cities, and have to bear perhaps the heaviest traffic of any rural highways; partly because some of them are used for interurban traffic, partly because of the traffic created in a belt about the city by the propinquity and the demands of its great consuming population. Often the farmers living in these belts are in a sense citizens of the towns whose market they supply, and whose shops they frequent. The cities are specially interested in the roads of this class, which have a direct bearing upon the food prices which prevail in them, and upon the comfort of their citizens.

(b) *Interurban Roads.*—These are main-travelled highways between centres of population, and are subjected to considerable use by persons other than farmers.

(c) *Rural Market Roads.*—These are main-travelled highways used mainly by farmers on their way to the centres where they buy and sell, but used by many whose properties do not border them. Often many of the township roads to be noticed in a moment discharge their traffic into these small arteries of local traffic. It is a function of these roads to lace together the various townships and rural communities.

2. Township Roads.—These constitute the vast mass of the roads of the countryside; they serve mainly the farmers who live alongside them, and for the most part lead into main-travelled or market highways.

The investigation made by Your Commissioners as to the proportion borne by these two general classes of roads to each other is not complete, and in their opinion should be continued. In the present circumstances, the general condition of rural roads being so indifferent, interurban and market routes have a tendency to shift, as one stretch of road is improved or another allowed to deteriorate; so that the volume of traffic borne by a particular route is not an absolute proof that under a proper organization of the road system of the Province, it would not be a main-travelled road. A road census would show what amount of travel is furnished to-day by a given district, and the channels which it now takes; but considerations such as the density of population, the productivity of the land, railway construction, possible or probable development, the distribution of road-making material, and so forth, would have to be taken into account.

One such consideration is the possibility of future urban growth which will lead to the places concerned sending out and attracting to themselves a greatly increased volume of traffic; should this occur, the place so developing would need additional market and interurban routes, striking out from it at varying angles, and in some cases cutting diagonally across the present rectangular road-patterns. It is suggested that tentative plans for such diagonal roads be drawn up with regard to certain prominent centres, and some arrangement—such as the prohibition of the erection of buildings in their track—be made to ensure the possibility of their being constructed at the lowest possible cost, if need should arise in the future.

It is the opinion of Your Commissioners that if due care is taken in studying

the situation, that the county roads, those taking care of the heavy non-local traffic, need not greatly exceed fifteen per cent. of the whole. Thus they view the problem as that of bringing 42,500 miles of township roads to a reasonably fair standard, and of fitting 7,500 miles of county roads to bear the severe demands made upon them.

This report would not be complete without some reference to toll roads, and this appears a suitable connection in which to touch upon this subject. As an evidence of the development of the country, toll roads have, during the past fifty years, passed from being the most welcome institution to that of the

Toll Roads. most despised. It should not be forgotten that in the earlier period of this country's history, when the resources of the people were quite insufficient to meet the needs of transportation, those who were prepared to build roads were public benefactors, even if allowed to collect interest on their investments through tolls. At the present time, county councils have the power to include them in their county roads system, the Province paying one-third of the purchase price. This plan has done away with a number, but some remain in Carleton County and a few isolated cases. It would appear that the additional machinery for controlling the various classes of county roads should be able to put into operation provisions similar to those in the existing law for the acquisition of these roads. With the aid for roads from cities, such as Your Commissioners suggest, it should be a very easy matter for the machinery of the suburban area in Carleton to reach an equitable basis and to allow the two-thirds cost—ascertained by arbitration—as between city, county, and possibly other local interests; while toll roads in other situations could be dealt with on the basis of the class of road within which they fall. The matter is one to which the Advisory Commission should properly extend their services.

IV.

The cost of the county roads is bound to be considerable. Until the advent of the high-speed motor, the art of road-building had been in a fairly settled condition, but the new vehicles have thrown it back into an experimental stage. The

problem is rendered the more difficult by the fact that motors and horse-drawn vehicles use the same roadways, with destructive effect; for the narrow tires of heavy wagons grind the stone to dust, and keep the road in a condition in which the shearing effect of rubber tires of the motor is most severely felt. Thus certain types of roads which would withstand motor traffic alone, fail when used by both types of vehicle. The practical effect of this condition is that the cost of roads exposed to heavy traffic is increasing.

Your Commissioners desire to make the following recommendations with regard to the treatment of these roads, which are subject to specially heavy traffic:

First.—With regard to *suburban roads*, the selection of roads to be regarded as such should lie with the Province; the various interests affected should, of course, be heard.

The control of the construction and the subsequent maintenance should be committed to Boards of Trustees, on which the city and the county should be represented. Until the road examination suggested elsewhere is carried out this summer, so as better to determine the grouping of these roads, it is not practicable to come forward with a clear plan of selection of these roads. An object of considerable importance is as far as possible to keep down their numbers.

With regard to the financial measures necessary to construct and maintain these special roads, Your Commissioners desire to recall what they already have written with regard to the justice of asking the cities to contribute to the support of roads in their suburban areas. They see no reason why that support should not be as general as, or on equal terms with, that given by rural municipalities. However, as it is a new departure, they suggest that the annual support given by the cities should not exceed a rate of three-quarters of a mill. It may be noted in this connection that some townships have been paying rates as high as five mills for roads. The funds provided by the cities should be expended solely on roads within their own suburban areas. The proportions of cost to be borne by the several parties concerned in these roads, Your Commissioners suggest, should be as follows:

The city	thirty per cent.
The county	thirty per cent.
The province	forty per cent.

Should the cost exceed \$10,000 a mile, the excess should be levied as a local improvement tax.

Secondly.—The treatment of *interurban roads* may be noticed. Within suburban areas, these roads should be treated as suburban roads. Once outside the suburban belt, the cost might be divided into three equal portions among the Province, the county, and the motor vehicles, and as the Province is the recipient of motor fees, its proportion might be two-thirds up to a total average cost of \$12,000 per mile.

The foregoing recommendations apply to permanent construction work. The distribution of the cost of maintenance must now be considered. Your Commissioners recommend that in the case of suburban roads, the city, the county, and the Province should each contribute a third. In the case of the interurban roads outside of suburban areas, they recommend that the county contribute sixty per cent. and the Province forty per cent.

As regards *county rural roads*, the control, in the opinion of this Commission, should rest with the county council, or in a permanent commission to be selected by that body. As regards the cost alike of construction and maintenance, the division Your Commissioners propose is sixty per cent. to be borne by the county and forty per cent. by the Province.

V.

The problem of township roads next calls for notice. An opinion which finds influential backing is that a vast amount of energy is wasted on these roads through the dumping of earth on the roadway to be quickly washed away during the usual wet season. Therefore, these township roads need attention. There are four hundred and twenty-six organized townships in the Province, with a total assessment in 1912 of \$604,737,037. The average rate for roads and bridges of this class is about \$1,500,000 annually.

Your Commission holds that the control of such roads, and the work of construction and supervision must rest as at present, entirely with local township councils.

It nevertheless seems highly important that some assistance should be extended to those townships, as the welfare of the Province demands that a heavy percentage of their rural roads should be brought up as quickly as possible to a fair standard

as earth roads; and it is felt that to accomplish this, some provision for stimulating local interest and directing local endeavour along channels in which it will prove most effective should be made.

It must be stated that with the very limited information available regarding these roads, it would seem questionable to attempt to deal with them in any positive way at the present time. The new highways organization, therefore, should be specially charged to give attention to main township roads. Provincial support meanwhile might be limited to three years, when the Department would be in a better position to bring forward some plan for rapidly bringing these roads up to meet the business needs of the people.

It is proposed that the aid should not be given to townships until the county has assumed a system of market roads; otherwise, as alternative plans, they might seriously interfere with the installation of a proper system of such county roads. It is felt by Your Commissioners that provision for a system of good market roads in each county is of first importance and that aid to townships should not be in any way allowed to take the place of such roads. Aided county and township roads are designed to be complementary parts in a general scheme; and aid to local roads should be for the purpose of encouraging their improvement as feeders to the market lines of more general use.

As a tentative plan, therefore, it is suggested that the Province be prepared to provide \$250,000 annually for three years, which is about twenty per cent. of two mills on the total assessment of about \$604,000,000, or between fifteen and twenty per cent. of the present cash expenditure by townships on their roads. The apportionment of the aid might be effected in various ways. One would be to make it on basis of population; another would be to make it on the basis of assessment. A third, which would be of special benefit to the weaker municipalities, would be to apportion the grant somewhat as follows:

**Proposed Aid
for Township
Roads.**

\$50,000 to be distributed proportionally on a basis of assessment.

\$50,000 to be distributed proportionally on a basis of population.

\$150,000 to be distributed proportionally on a basis of area.

A plan of assistance which has been suggested is that short-term loans without interest might be granted to townships by the Government for road purposes. Difficulties have occurred in the past history of the Province through the adoption of a policy of lending to municipalities, but Your Commissioners believe that much good might be effected in case repayment of the loans can be fully safeguarded.

In each case the grant should depend upon the observance of certain conditions, such as—

- (1) Each township should spend at least four dollars on its township roads for every dollar to be contributed by the Government.
- (2) Proper drainage should be installed for each stretch of roadway aided.
- (3) Statute labour should be abolished or commuted.
- (4) The roads should be dragged.
- (5) A proper township road organization should be established.

The establishment of an efficient organization is vital, and the most essential feature of such an organization is one township foreman in charge of road work displacing all other pathmasters and commissioners and retained as permanently as a township clerk or treasurer.

Little progress can be expected from township expenditure until it is put in charge of permanent road foremen, who, by their growing experience and constant attention, can bring system, uniformity, and continuity into the work.

In addition, therefore, to the actual improvement that would be accomplished by the expenditures suggested, it is felt that the educational value of the methods of road-building upon which the Province could insist would be great, and that once the value of such methods could in this practical way be exemplified in a community, there would be little desire to return to the less effective methods at present generally in use.

VI.

Your Commissioners, in making the foregoing classification, have been guided by the belief that it is not the function of a central government to do for the individual what he can do for himself, nor for a group of citizens what they **Co-operation** can, with proper organization, do for themselves. But, on the other **and Perman-** hand, it is in the highest degree desirable, by suitable legislation, **ent Construc-** tion Necessary to provide each group of citizens with suitable plans for co-operation; to stimulate their efforts on occasion with a degree of temporary financial aid; and in cases of necessity only, do for them, financially or otherwise, what they are unable to do for themselves.

Broadly, it is the general experience of all countries that roads of local traffic only lightly travelled, can be managed and financed by the local community alone; the function of a central government being, by well-advised legislation, to provide effective means of local co-operation, with Government assistance only as a measure for stimulating and focusing local effort in the early stages of a country's development, and as an educative step.

On the other hand, roads which carry traffic from a considerable area (on which unites the traffic of numerous local roads, serving a township or group of townships) enter a field of construction which demands large outlay, scope of organization, and continuity of effort beyond the ability of local or municipal organization alone to carry out. This has been the experience of every country which has attained a system of good roads; and to the work of building and maintaining roads of more than local traffic, the control and financial co-operation of the central government is in all cases being extended. Great Britain, France, Germany, the United States, owe their good roads, where they exist or are being built, to the active co-operation of their central governments. Equitable distribution of cost, an adequate scheme of finance, representation in expenditure, technical efficiency and business management all demand the grouping of roads according to a suitable classification. For this reason Your Commissioners have broadly divided the roads into township roads, or those of local traffic; and county roads, those which carry united traffic, and to which the co-operation of the Provincial Government should be more permanently extended.

The maintenance of the well-built roads in particular demands that they should be grouped under counties, rather than left with the local roads under township management. Otherwise expensive roads, after being built, are apt to be starved and allowed to fall into neglect, in order that the local roads may be improved. When a main road has been built, the tendency is for residents on other roads to say to their township council: "Don't spend another cent on that good road until my road is in equally good condition." Many old toll roads of the Province, formerly good, have been permitted to degenerate after passing to township control, from this cause.

The classification of roads and their allotment for control to separate bodies may be justified on other grounds, such as the principle of "division of labour"; the need for a starting point on which to focus a limited degree of energy; or the cost of machinery and efficient superintendence, which townships could not reasonably provide.

Your Commissioners have already stated that the plan of permanent roads which it is felt the Province would be justified at this time in embarking upon, would involve an expenditure on such roads of about \$30,000,000. The highway development, as outlined, could not be prosecuted with vigour unless future revenues are anticipated by the issue of bonds. The amounts to be ultimately provided by the different interests might be as follows:

By the Province (including revenue from motor fees)	\$12,000,000
By the counties	12,000,000
By the cities	6,000,000
	<hr/>
	\$30,000,000

These obligations, it must be repeated, would be incurred gradually over a period of, say, fifteen years, and the full amount would not be incurred until some time about 1930.

The first principle in connection with road expenditures is that money secured by bond issues should only be put into permanent roads. The future should not be called upon to pay for the present, unless the present creates something that will be useful to the future. The maintenance of permanent roads is made necessary through the wear and tear of the present generation; hence that burden should be met by the users. As bond issues must eventually be redeemed, and as the roads will wear out and call for renewal from time to time, the bonds should not run for a longer period than the natural life of the road with proper maintenance. It is believed, therefore, that the bond should preferably be redeemed within twenty years, and should not exceed thirty years.

Maintenance would become increasingly heavy as stretch after stretch of standard roadway came into existence; from the moment a permanent road is constructed, a properly organized system of repair and upkeep must be applied to it if the first expense is not to be wasted and the project to issue in disappointment.

An intelligent system of records and cost-keeping is a basic requirement in an undertaking such as road construction and maintenance, for the guidance of those in charge of the work, as well as for the information of the public who supply the funds. Economy of expenditure, and public confidence and support will be greatly aided by adequate records of work done, with a corresponding and lucid statement of expenditure. Where Provincial aid is granted, such records are necessary to determine the sum properly payable by the Government. Uniformity of system should also be required. To these ends, the statistics of road construction and expenditure should be guided by the Highways Department of the Province.

VII.

Your Commissioners believe that the construction of a system of roads in Ontario should be regarded by the Provincial Government as a single great work,

even though in the early years it appears as a series of detached sections. In order that these sections may develop in time into a harmonious whole, it seems not only necessary that expenditures for all permanent roads should have the approval of the Provincial Highways Department, but that it should have full rights of inspection of the work during its progress as well.

Another matter which deserves attention is that the law should provide a penalty for the diversion of moneys raised by debenture issues from the purpose for which raised—permanent road construction.

The attention of Your Commissioners has been directed to cases of townships which have an exceptional number of expensive bridges to build and maintain. Owing to large rivers or numerous small watercourses, some townships have presented the claim that they are, from a cause which they cannot control, unduly burdened, or faced with an expenditure which they cannot reasonably meet, and that the cost should in part be undertaken by the Province, or distributed over a wider area than the township alone. The matter is one upon which Your Commissioners have not, in the short period of their work, had opportunity to obtain data, but would commend the matter for consideration.

A number of villages throughout the Province have a very small population and assessment in proportion to their area and road mileage. It is suggested that the Highways Department should be given authority to deal specially with such cases, in order that the construction of main roads through them may be facilitated.

Your Commissioners are of the opinion that annual municipal elections, and a one-year term of office for municipal councillors, constitute features which do not tend to efficiency or progress in the management of roads, in that greater permanency is desirable. In England, councillors are elected for a term of three years; in Nova Scotia, Quebec, and a number of States, the term is for two years. In Ontario, municipalities have the power to adopt a two-year term, but in no case has the change been made. The term of office for municipal councillors is an arbitrary matter and should be guided by practical considerations rather than by custom or limitations of the calendar. In creating greater permanency of road management, a term of at least two years would be of advantage; but should public opinion not at the present time justify the longer term, Your Commissioners would suggest as a favourable alternative, the proposal of the Executive Committee of the Ontario Good Roads Association, that there be specified designation of each candidate for nomination and election purposes—as reeve, deputy reeve, first, second, or third councillor, as the case may be—a method which would not involve the uncertainty and expense of an election for all, in case only one councillor was opposed.

VIII.

A highly important aspect of the good roads movement is the administration of the service. The United States are doing a great deal in the way of highway improvement. In that country the pendulum appears to have swung over to the side of public services being performed by commissioners, and the minds of the American people seem to have fastened with especial tenacity upon the idea of having road departments controlled in

Administration of Highways Department.

this manner. As a rule, the State Road Commissions consist of three members, though in New York quite recently the earlier commission of three was replaced by one such officer.

Occasionally the suggestion is advanced in this country that the American example be followed and the road service be committed to a commission. The American system separates legislative and executive authority, whereas in Canada the British system of government prevails, and the essence of this is the responsibility of a Minister for the spending of the taxes which are paid by the people, and the administering of the resources possessed by them. The American system of divided responsibility does not seem suitable for engrafting upon our institutions. Inasmuch as the Minister is responsible to the people through their Legislature for the expenditure of their taxes, he could not be expected to hand over to others his responsibility of directing that expenditure.

In fact, the commissioners at the head of road departments in the United States, with possibly one or two exceptions, are appointed by the Governor for periods not exceeding five years, and they are responsible to the Legislature for the expenditure of moneys on roads. Your Commissioners see no sound reason for departing from the system peculiar to the institutions of this country, under which the Road Department should have, as already noted, a political head as well as a permanent one—a Deputy, also a Chief Engineer. To add to that service three commissioners, making in all five highly paid men in addition to the Minister, would overload the head of the service. Moreover, many of the services which these salaried commissioners should undertake would be performed equally well by less highly paid officials more strictly under control.

It may, however, be possible to find a place in our system for a commission, not of an executive, but of a strictly advisory nature. In the Eastern States of the American Union, men of means now are beginning to realize that they occupy positions of special responsibility in the commonwealth. The ordinary routine work of politics, with its concomitants of organization, canvassing, public speaking and electioneering, often does not appeal to these men, and they are therefore debarred from serving the public in the traditional way of seeking seats in the Legislature; yet they are willing to do the State service in some other way calling for less sacrifice of privacy and smaller demands upon their time. For men of this type the appointive commission affords an opening for service to the community; what they often possess is executive ability and administrative skill, and these they can give to the public without participating in the conflicts which attend the shaping of general policy in the Legislature.

Could not the Province of Ontario, in a somewhat similar way, get valuable work out of certain of her citizens who are endowed with qualities useful for the public service, but who have held aloof from the incidents of party strife? If men of this class could be induced to act as an Advisory Commission, valuable public service might be secured.

Then with a deputy head, a chief engineer, and such a commission at one end of the organization, and technical road-builders at the other, such intervening machinery as would be necessary could be built in as the work progressed.

Your Commissioners, in putting forward this suggestion, keep clearly in mind the fact that the spending of public money must take place in conformity with two cardinal principles of the British system of government:

(1) The general policy, using this term in its broadest signification, must be determined by the elected representatives of the people.

(2) The administration of the work must proceed by the authority and under the close direction of a Minister, answerable to the elected representatives of the people.

Your Commissioners conceive that the field exists within which, without contravening these principles, the ability of men of the type already mentioned may find scope. For one thing, apart from the general policy to be pursued, there is what may be termed a technical policy. The decision that better roads shall be built is proper for the Legislature to form; the decision that they shall conform to certain standards of gradients, curvature, solidity of construction, etc., or they shall serve centres of population according to specific business principles, is one which the Legislature will be well advised to leave to technical experts. The responsibility for these decisions on technical policy must be borne by the Minister, who must seek technical advice. Could not this advice, in its large aspects, be given by men of large affairs, willing to give some portion of their time and energy to the promotion of the public good?

Another consideration is that such a body should be of influence in composing the numerous differences of opinion which are likely to arise in the practical working out of the policy proposed. For example, it is suggested in this report that a city may advantageously contribute to the construction and upkeep of the suburban roads in the belt immediately surrounding it. If this is adopted, keen bargaining is to be expected as regards the width of the belt within which this assistance is to apply, as regards the roads to be improved, and on other points of detail, and it is conceivable that an Advisory Commission of the type suggested might be of service in mediating between the several parties.

Your Commission accordingly would suggest that it may be practicable for the Province to obtain the services of an unpaid Advisory Commission, to consult with the Minister and the senior officers on questions which they have ventured to describe as having to do with technical policy. The period of appointment might be five years. Your Commissioners repeat that under the system they have in mind, full authority will rest with the Minister, and full responsibility would be borne by him; their point is that in coming to decisions by which he must stand or fall, he might be greatly aided by the advice of competent men of large affairs, pledged to study the problems arising and in a position to be disinterested; and that certain aspects of the daily work of the Department would be facilitated.

Canada has in recent years enabled many men to become independent, and the time is here when such men should be prepared to realize their responsibilities to the State, as is now being done by men of means in the United States. It should only be necessary to draw attention to this matter in a proper spirit to make men see their undoubted duty to the State. It should be possible to find three such men—broad-minded men—who would accept the position as an honorary one, with no salary. To be prepared to give up five years of their lives to such a work, starting out with the ambition to aid the Government in getting Ontario established, well on towards placing her in the very forefront, amongst the most advanced road-builders on this continent, is an inspiring task for the biggest kind of large-minded men. What public service is there to equal it?

And when it is remembered that the problem is not one of supplying a fixed population with suitable roads, but may also be made a prominent factor in the further settlement of the Province, and fully as necessary in that respect as the

supplying the country with railways, it at once shows the opportunity presented for men of the calibre of mind and energy of our most successful railway constructors.

IX.

The money for the roads must come from the people, either directly or indirectly. The control of the construction and maintenance of the roads must rest with public servants—with officers of the Province, with officers of the local governing body, or partly with one and partly with the other.

Control of Roads. Centralized control by Provincial officers offers certain advantages; in particular it would guarantee uniformity of work, and it probably would promote economy and efficiency. It also offers certain disadvantages, and of these perhaps the chief is that it would tempt the people to consider themselves absolved from responsibility for the care of their roads. The guarantee of democratic institutions in North America is not only the willingness but the desire of the people to attend to their own business, and not to become automatons, almost every act of whom is regulated by some legislative enactment. Furthermore, the nearer the people are brought to the actual control of their own property, the roads, the nearer the personal ownership feature becomes, and that means greater care. Let the people divest themselves of the management and control of their own property, handing it over to a central authority, then it becomes, to some extent, a matter of competition between that authority and the people—the one to create the utility to withstand the aggressive use of the other.

Balancing the two sets of considerations, it seems a sound policy, especially in the earlier periods of road development in the vast Province of Ontario, with its limited population, to have a central Road Department working in harmony with local authorities, throwing as far as possible on the latter the responsibility of producing and maintaining roads necessary for the traffic needs of the people.

To this matter of promoting, of encouraging, of stimulating the interest of the people, Your Commissioners attach great importance. Apart from the course of throwing the responsibility upon them—which they agree is the great means of arousing attention—there are lesser means of promoting interest. Efforts might well be made to awake and develop a spirit of competition among the counties; the Provincial Road Department might offer a few prizes annually for the best suggestions for the improvement and control of roads. The Government might offer yearly a banner to the county making most progress in roadwork, and the names of the successful county and those responsible for its work might be inscribed in some public place—say on some suitable structure in the grounds of the Toronto National Exhibition. In short, great pains should be taken to get those using the roads into the habit of thinking of them, so that there would result a pressure of public opinion, an independent supervision of the work by the people themselves. Too often it is exceedingly difficult to get the public to take an interest in what is essentially its own business; it should be the constant aim of all road organizations to combat this apathy and to devise methods of evoking interest. The more successful such institutions are in that respect, the greater will be the willingness of the people to expend money for road development, and the less the opportunities become for wasteful expenditure.

X.

Your Commissioners desire now to revert to one of their earlier observations, regarding the part which the cities should play in the movement for better roads. The opinion frequently is advanced in the cities that the provision and support of good roads should fall upon the farmer, inasmuch as he must use them to market his products. The farmer, however, is fully justified in maintaining that the cities are equally interested in the roads over which their food supplies reach them. In point of fact, the city and country are necessary to each other, with the advantage somewhat on the farmer's side; for while he could manage without the city, the city could not exist without him.

A number of aspects of the relations of the two are dealt with at some length in the appendices to this report. It suffices here to draw attention to the existence about the city of a belt of rural territory which is knit to it in the closest fashion. Much of the city's food is grown in this belt; more would be if the means of communication were better. Sundry industries, due to the presence of the city, are prosecuted in this area. The residents for some miles out are valuable customers of the city's shops. In every way the city stands to gain by the equipping of this belt with a system of roads able to carry a heavy traffic with speed and economy. The speed of the motor bus and motor truck would extend the city's influence; that is, the area from which it could draw food and direct trade. Opportunities would be afforded for a specially beneficial development, the rapid moving of workers out into the countryside after their daily task is over. It is understood that in Belgium one-third of the industrial workers live outside of the towns, cultivating small holdings of land, under conditions of health which surpass these of residence in the crowded streets. From the standpoint of the city's food supply alone the improvement of the roads is of great importance to the town-dwellers.

Economically speaking, distances are measured by time, and if men trespass too much on the early morning hours in order to reach distant markets, nature makes her claim on them later on. If the constant, regular supply to city markets is limited to points, say, two hours therefrom, it would mean leaving the farm at six a.m. in order to be on the market stand at eight a.m. It is easy to realize, therefore, that by cheap motors and good roads, the supply area can be greatly enlarged, as compared with the present districts, in which supplies are sent into town by horse-drawn vehicles on indifferent roads. Further, the widening of the belt means enhancing the profits per acre, to the advantage of the farmer.

Again, the countryside has suffered for several decades from certain inevitable developments. Forty years ago a considerable amount of industrial work was carried on in nearly every small town, in nearly every village, and indeed in many rural communities too small to aspire to the name and style of village. This caused a wholesome diversion of industry, increased the interest of country life, and was in most respects a beneficial social influence. The march of progress has swept that state of things away. The tendency of the age is towards centralization. Those small industries, which mean much to the small towns, have been absorbed into those operating in larger centres. The countryside must specialize in farming. Why then should cities, to a certain extent built up by rural districts, which have lost taxable property to those cities, not be prepared to contribute to the road system for the Province?

It is, in short, the contention of Your Commissioners that the roads of this suburban belt should be brought up to a high standard, suited for heavy traffic, some of it carried on at considerable speed, and that the principal beneficiary



Dundas Street—Applying Tar, to prevent dust and preserve the road surface.
One-half gallon per square yard.



Dundas Street, near Toronto. Carpeted with tar and fine gravel.

would be the city. On whom should the burden fall? The county and the township already spend as much upon these highways as strictly county and township purposes warrant; the wear and tear is inflicted by city people and by others whose residence in the suburban area is due to the propinquity of the city. These and other considerations are responsible for the conclusions reached by Your Commissioners and expressed in a previous classification.

XI.

In dealing with interurban roads it is necessary to glance at one aspect of the problem created by the motor. The greatest asset of some European countries is their scenery; it attracts tourists, and the money they spend is of great importance to the community. Ontario possesses exceedingly attractive districts, especially in the Northern sections, where the climate in summer is agreeable and invigorating. Already our neighbours to the South have begun to flock to these resorts, and this trade has become important to several districts of the Province. Bearing in mind the tremendous wealth possessed by our neighbours, and the fact that even now there is one automobile in the United States for each eighty of its population, and that the tendency to reach such resorts by motor is increasing, it is not difficult to realize that with a system of main arteries penetrating the country, and more especially leading into the Northern areas of the Province, a still more important tourist traffic would be developed and would justify the construction of such roads when the Province reaches a position to be able to finance them. This traffic is of little benefit to the people of the intervening districts traversed; it throngs the roads, and there is a tendency to over-rapid driving, with its accompanying nuisances, of which the dust evil is but one. However, the traffic is of great value to the summer resort region, which would be the goal of most of these hurrying wayfarers, and the interests of Muskoka, the Georgian Bay, and the Trent region must be considered as well as those of the more strictly farming districts.

This traffic may be regarded as the most extreme which interurban travel is likely to assume, but there are many degrees of it. Your Commissioners feel called upon to refer to those roads within the interior lake districts necessary for tourist purposes, as the matter was brought to their attention by residents of those districts. Still they are free to confess that the resources of the Province should first be directed to the upbuilding of the roads necessary for the agricultural needs of the people.

Along the interurban roads many persons will pass who do not live in the municipalities in which they are situated. This is perfectly natural; from time immemorial, the King's highway has been for the use of the traveller, regardless of his residence. It is necessary, of course, to see that the burdens of constructing and maintaining such a road are equitably adjusted, so as not to impose an undue proportion of them on the people of the locality. Indeed, if measures of this sort are not taken, the situation will work itself out, and disadvantageously to all concerned; for the motorists will search out and appropriate to their use the best stretches, and there will be motor routes which at once will give dissatisfaction to the motorists and inflict a sense of injury upon the farmers and ratepayers along them.

At the same time, a road which constitutes an artery of this sort is not exclusively an affair for the traveller from a distance. It is a series of links—market roads necessary for the needs of local people, and it will be the strictly local

road for those who dwell along it. In short, it discharges functions at once local, Provincial, and in some cases even National, and in consequence it demands assistance from more than local administrations.

The road problem thus is part of the problem of the future development of Ontario. The needs of the future must be anticipated for a few years, at all events. Before it is feasible for the Highways Department and the country authorities to decide what function a given stretch of road is to discharge, a very complete traffic census should be taken to show the agricultural development of the territory which these roads tap. That work—the traffic census—has been begun by Your Commissioners, but it should be enlarged upon this coming summer and done more thoroughly, in order to aid in determining a proper classification of roads. Other factors in deciding the question of classification are area of county, population, and productivity per acre, including, as has already been pointed out, the growth factor within, say, the next decade.

This census will further throw light upon the proportions in which each stretch of road is used for local, for non-local, for interurban, and for suburban purposes.

XII.

The solution of the good roads problem would be very much simplified indeed if the Provincial aid for permanent roads could be obtained by direct taxation, as in various States of the American Union. There, the people, or their legislators,

Taxation of Motor Vehicles. declare for or against a specified amount being invested in roads by the State. This direct levy, if other funds are not available, is annually made on all municipalities, urban and rural alike, to meet the necessary payments. The result of this is that in the State of New York, which has authorized an expenditure on permanent roads, since 1905, of \$100,000,000, the cities and towns will have to contribute eighty-five per cent. of that amount.

Taxation of motors often is suggested. Your Commissioners recognize the justice of the suggestion to this extent, that they recognize the automobile as a form of wealth which is proper for taxation, and agree that it is fair to appropriate the amount raised for road improvement. They recommend the following scheme of taxation:

(1) Automobile Schedule:

Horsepower (Brake).	Registration Fee.
Up to 20	\$10 00 per car
21 to 30	50 per h. p.
31 to 40	60 per h. p.
41 to 56	75 per h. p.
Over 56	1 00 per h. p.

(2) Commercial Truck Schedule:

2 tons and less	10 00 per car
Over 2 tons	5 00 per ton

- (3) Motor Cycles 4 00
- (4) Chauffeurs 4 00
- (5) Foreign Tourists 10 00 (uniformly)
- (6) Foreign Trucks 10 00 (uniformly)

(Items (5) and (6) to be subject to reciprocal arrangements.)

The above figures applied to Ontario motors, etc., would yield about. \$400,000

The schedule of New York applied to Ontario motors, items (1) and (2) only, would yield about.....	\$101,340
The schedule of Massachusetts, do.....	163,976
The schedule of New Hampshire, do.....	658,115
The schedule of Great Britain, do.....	658,115
The schedule of Italy, do.....	844,129
(It is understood that the New York fees may be increased.)	

In proposing these rates of taxation, Your Commissioners decline to take the view that the motor tax should be levied as a punitive measure, on the ground that these machines are the chief agency in the destruction of the roads. For one reason, horse-drawn vehicles also use the roads, and in some cases contribute the sort of wear which causes the motors to be destructive; there are certain types of roads which would give fair satisfaction if their use were confined to motors, but which deteriorate rapidly when the narrow-tired wagon abrades their surface in such a way as to give the clutching wheel of the motor car the excavating effect which the road-builders dread. For another, if the principle of grading the taxation according to the individual's use of the roads were accepted, it might be urged that the contributors of taxes to the upkeep of schools should be those whose children attend, and those alone, and on a per capita basis, regardless of the varying ability of the taxpayers to contribute.

It will be observed that it is proposed the tax be graduated according to the capacity of the car in horse power and speed. It appears unfair to tax the small "runabout" motor as heavily as the sixty horse power touring car, which, if allowed to tear over the road at twenty-five miles an hour and more, will do very great damage to the road. Indeed, it seems not unreasonable that there should be a light tax placed on heavy wagons having narrow-tired wheels when used on permanent roads. Your Commissioners realize that it would be unfair to demand from farmers such a tax without giving them a few years within which to adopt wide and less destructive tires.

A very interesting analysis of the motors in use in Ontario will be found in the appendix. During the year ending 31st December last, there were licensed 16,458 automobiles—medical men having 1,139. The list of motors owned in villages and rural districts number 3,161, of which 966 were in the possession of farmers.

XIII.

Much attention has been paid in recent years to the taxation of railways. The desire to evade taxation—it is understood—was carried by corporations in the United States to lengths which aroused much public irritation, and provoked sharp measures designed to oblige them to bear their share of the public burdens. Of late a reaction seems to have set in and there are many in that country who now think that the railway corporations are being unduly pressed, alike as regards the rights of their shareholders and as regards the interests of the public; it is apprehended in that country that the public utilities may deteriorate if the State does not assume a more friendly attitude towards the corporations. The opinion is freely expressed that corporations have brought it on themselves in their efforts to avoid paying a fair share of the tax burden, and corporations in Canada, it would seem, would be well advised to forestall the possibility of any such movement in this country by showing a willingness to have their property properly taxed, and by otherwise aiding the tax officers in their work.

**Equality in
Assessment
and Taxation
Necessary.**

An examination was made of recent sales in certain registry offices in the Province, and then the assessed values of these properties were obtained from municipal rolls. It was found that the ratio of assessment to sale figures varied from six to ninety-six per cent. The good roads are to lace together all the townships within the various counties; the people are to be taxed for those roads; the amount of the taxation will depend upon the assessment; and if the people within those townships are to be fairly and equitably taxed for such purposes, there should be some method of creating uniform assessments.

Your Commissioners understand that certain representations as to assessment methods have been put forward by the Association of Ontario Municipalities. These representations Your Commissioners have not seen, and they by no means wish to run counter to them. In the absence of information on the subject, they venture to observe that the assessors are appointed annually. Each does his valuing independently of what is being done in the adjoining municipality. The suggestion is advanced, subject to the qualification just made, that while the assessment roll might be corrected annually, the assessing should be done with thoroughness every five years, instead of annually in the haphazard way which appears to prevail in some municipalities under the existing method. If this proposal to have the assessment made every five years is accepted, a further suggestion is that there should be a district or county assessor, and that the assessors in each municipality in the county or division shall work under instructions issued through him. For anyone to come forward, as has been done, and state that a certain township under the existing method was assessed thirty mills on the dollar is meaningless, as that rate may only be on an assessment of possibly twenty-five or fifty per cent. of the actual value.

The better roads movement, in short, begins with the assessment roll and ends with increased facilities for intercommunication between the producer and the consumer, with the result of greater efficiency in the transaction of the business of the community. Thus, the assessment roll plays a most important part in good roads.

XIV.

**Summary of
Recommendations.**

Your Commissioners desire to summarize briefly some of their recommendations:

- Control.**

Finance.
1. The committing of the actual control and management of the roads, so far as possible, to local bodies—the county councils, or commissions appointed by them, boards of trustees, etc.
 2. The blocking out of a definite amount of work to be begun in 1915, and to be completed about 1930. Cities should contribute at least to the construction and upkeep of the roads in their immediate neighbourhood. The permanent construction work should be regarded as a capital expenditure, and should be financed by bond issues designed to reach by 1930 a total sum of about \$30,000,000, apportioned as follows:

To the Province, (including the capitalization of some of the revenue from motor fees)	\$12,000,000
To the counties	12,000,000
To the cities	6,000,000

Maintenance. 3. The provision for proper maintenance for every mile of permanent road work, the funds for this to be obtained from current revenues.

Township Roads. 4. The devoting of special attention to the improvement of township roads.

Tax on Motor Vehicles. 5. The putting of taxation of motor vehicles on a systematic basis, which Your Commissioners estimate would produce about \$400,000 in the earlier years.

Central Highways Department. 6. The development of a central Highways Department under the headship of a Minister of the Crown, with, as its principal permanent officials, a Deputy Minister and a Chief Engineer, and in addition an unpaid Advisory Commission of men with a genius for accomplishing big things.

In view of the impossibility of installing a new plan of road development as outlined in this report before 1915, Your Commissioners believe that:

Work on County Roads During 1914. 1. Counties now operating under the Highway Improvement Act should be encouraged to continue as usual their road work this coming summer, and that the regulations under the Act should be made as elastic as possible so as to allow the other counties to begin work and thereby take advantage of the aid thereunder.

2. There should be created a sufficient organization to carry on this summer the following investigations:

Information Wanted. (a) A motor survey of principal roads to determine their physical condition.
(b) A traffic census to determine the present road needs of the Province.

(c) An investigation of main township road conditions.
(d) An investigation of the Hamilton-Toronto, and Ottawa-St. Lawrence Roads, obtaining plans and specifications of same.

(e) An investigation designed to outline a plan of market roads for counties not now operating under the Highway Improvement Act.

(f) A determination of suburban areas about principal centres.

Finally, Your Commissioners wish gratefully to acknowledge the courtesies extended them by the Highway Commissioners of those Provinces and States to which they appealed for information. A vast amount of material has been freely furnished, all of which is on file for future use by the Provincial highway organization.

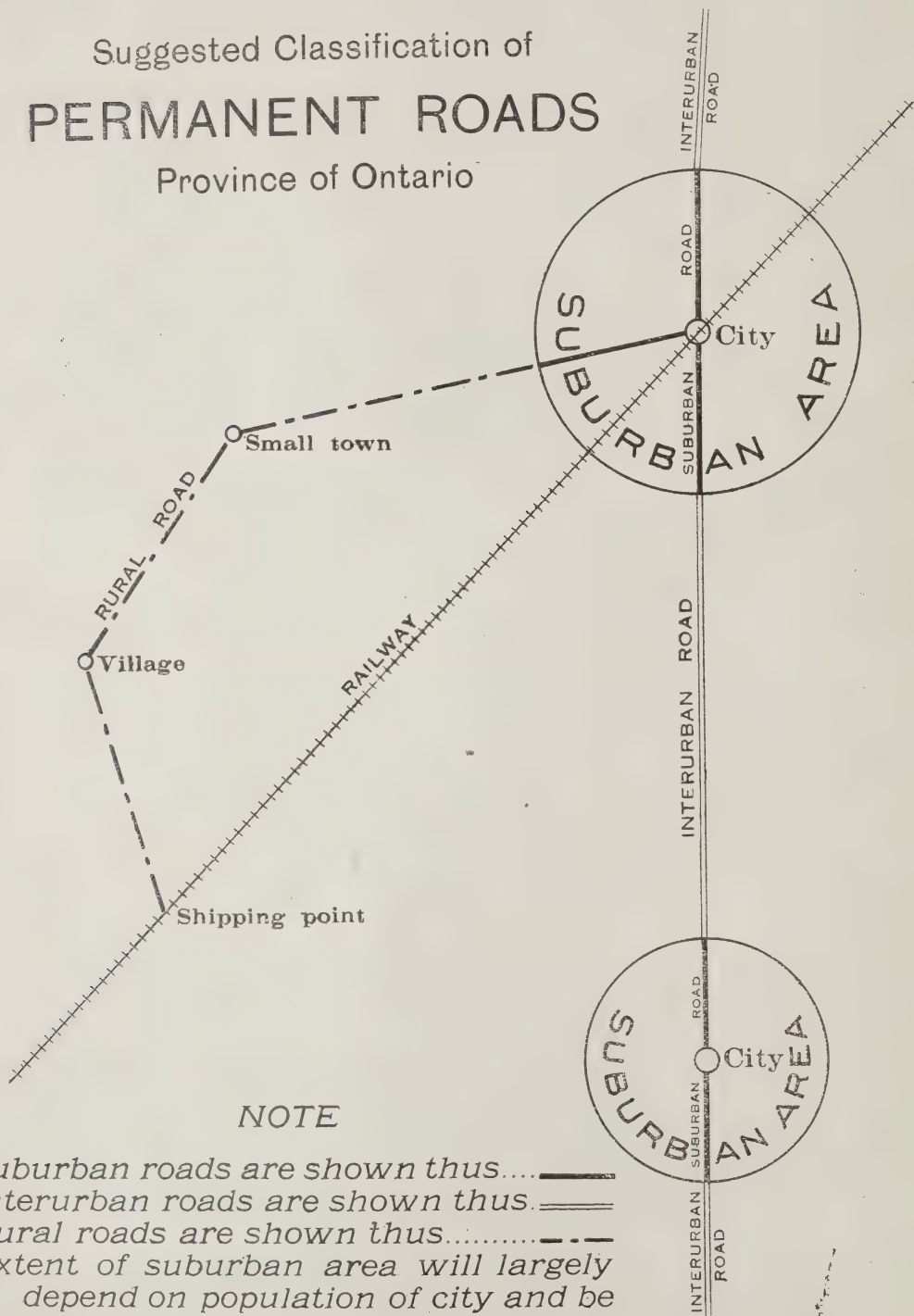
Further, Your Commissioners wish to acknowledge their deep sense of gratitude to the Ontario Good Roads Association, also many gentlemen interested in Provincial road problems, and to add that if Your Commissioners have in any way failed in their efforts in dealing with this vast and important subject, the fault is their own entirely, as Your Commissioners must acknowledge that Your Honour's advisers facilitated the efforts of the undersigned in every possible way.

(Signed) C. A. MAGRATH.
W. A. MCLEAN.
A. M. RANKIN.

Toronto, 31st March, 1914.

Suggested Classification of PERMANENT ROADS

Province of Ontario



NOTE

Suburban roads are shown thus....

Interurban roads are shown thus....

Rural roads are shown thus.....

Extent of suburban area will largely depend on population of city and be determined by Highways Department after having received views of County and City.

MEMORANDUM TO ACCOMPANY DIAGRAM SHOWING SUGGESTED CLASSIFICATION OF PERMANENT ROADS.

The important roads of each county carry about 80 per cent. of the traffic, and amount to about 15 per cent. of the total mileage of all roads in the country.

Thus important roads called County Roads have three functions to perform, and are consequently divided into three grades:—

Suburban shown on diagram by solid black line.

Interurban shown on diagram by double line.

Rural shown on diagram by broken line.

All three classes are used by the farmers of the County, therefore all have a county function to perform and all should receive support from the County. The suburban road in addition has certain city functions, and the interurban has its additional urban functions outside of the suburban area as well as certain provincial, and in some cases, national services to render and is largely used by motors. These functions therefore call for support as follows:—

Rural roads—County and Provincial aid.

Suburban—County, City and Provincial aid.

Interurban roads—County, Province expending motor fees and Provincial aid.

Hence the following division has been suggested:—

Classification	Construction			Maintenance		
	County.	City.	Province.	County.	City.	Province.
Rural	% 60	%	% 40	% 60	%	% 40
Suburban*	30	30	40	33 $\frac{1}{3}$	33 $\frac{1}{3}$	33 $\frac{1}{3}$
Interurban†	33 $\frac{1}{3}$	.....	66 $\frac{2}{3}$	60	.....	40

* If cost exceeds \$10,000 per mile, excess to be met by Local Improvement Tax.

† To cost not exceeding \$12,000 per mile, revenue from motor fees to supply one-half of Provincial aid.

APPENDICES

APPENDIX No. 1

(a) Agricultural Interests

Your Commissioners desire now to direct attention to the importance of the agricultural interest. The country has arrived at a point in its development when much depends upon the work of the farmers during the next few years. The significance of the present juncture is made clear by Sir George Paish, editor of the *London Statist*, in his contention that Canada must look to her farming and mining operations to redeem her pledges to the investors of the world. In reference to railway development, after stating his belief that the constructive work upon transportation and industrial equipment has been practically completed for a time, he writes as follows:

"It is evident that the railway machinery created to take care of the production of the country is sufficient to deal with at least twice, if not three times, the existing output, and it is obvious that the burden of interest upon the immense amount of capital supplied will be a heavy one until the productive power of the country is greatly increased. I am convinced that every possible effort will be made by all concerned—the Canadian Government, the Provincial Governments, the municipalities, the great railway companies, bankers, traders and others as well as by British investors—to increase rapidly the agricultural and mineral output of the country upon which the welfare of the Canadian people, both individually and collectively absolutely depends, and that the effect of their concerted effort will be so great that the country will carry with safety a burden of interest which might otherwise overtax its strength. It is, however, of the greatest possible importance that the work of directly increasing the productive power of the country by placing a larger proportion of the population upon the land and in the mines should be carried out with the least possible delay."

In other words, in the years which are coming upon us, the farmer and the miner must be our reliance; to the two might be added the lumberman. While all three must play their part, the farmer's is by far the largest share of the work. The strictly rural population of the settled portions of the Province stood in 1911 at 1,024,000 as against 1,271,000 in the urban municipalities so that the farmers constitute by far the most numerous single element in the community. In the aggregate they have the largest capital investment in the Province: the last census shows the following comparison:

Capital investment in agriculture (Ontario only)	\$1,283,000,000
Capital investment in manufactures and industries (Dom- inion of Canada)	1,247,500,000
Agriculture exceeds by	\$35,500,000

Still more is the farmer the great wealth producer of the Province; the census returns for Ontario show the three great industries ranking thus in the matter of annual production:

Agriculture	\$175,000,000
Mining	39,000,000
Lumbering	30,000,000

It has been demonstrated that the application to all the farms of the Province of the methods employed on the best ten per cent. of them would double the value of its agricultural production. How great would be the prosperity of Ontario if her agricultural production rose to \$350,000,000. In no other department of the life of the community is any such increase of output of wealth even remotely possible within a reasonable period. General conditions are necessary to such a result, and they range from willingness on the part of the farmer to adopt the methods actually in use by some of their number to the provision by the people of the equipment which is necessary. Good roads are part of the equipment supplied to the individual farmer by the community. The man whose farm is separated from its market by several miles of difficult roadway wastes part of his time, his energy and his capital on unnecessary effort in transportation; he is driven into the less productive kinds of farming, and he loses part of the proper returns, even from his unproductive type of farming. Good roads will not of themselves increase production and enhance values, but they give the farmer a chance to do these things, and they are an indispensable preliminary to the process of getting more from the land.

Of course certain qualifications must be borne in mind in considering the importance of the farmer's place in the wealth production of the community. The farmer's capital, enormous in the aggregate, presents one or two characteristics which govern and indeed limit its use. For the most part it is fixed; little of it is liquid enough to be applied promptly upon new enterprises. While the sum of it is very large, there are a great many persons to share it, so that no one farmer commands a very large amount. The farmers can do much if the effort required of each is moderate and if time is given; but the margin available for immediate outlay is narrow. Here the cities, with their great concentration of capital, and with their reserves of liquid capital, have an advantage when it comes to undertaking considerable enterprises whose fruit can only come in the future. Indeed, we may go further and say that this is one of the city's express functions in the community. If large commitments of capital are required, the city must bear its part.

At this point Your Commissioners must notice an argument which frequently is used with regard to highway development: the suggestion that the social development of the countryside is necessary for the purpose of rendering it a more pleasant place to live in, and so checking the movement from the farm to the city. They accept as proved and known to all the proposition that better roads will improve social conditions. It is obvious that good roads will aid in the rapid and effective installation of rural mail delivery. It is unnecessary to dwell upon the changes in conditions which will follow those interlaced improvements, the rural telephone, the parcel post, rural mail delivery, increased use of motors by farmers, and the good roads which make practicable all of these but the telephone. Fully conscious of these considerations, they abstain from doing

more than mention them, for they are convinced that the economic argument is the one to press. The farmer's social development may be left in his own hands without officious advice from outsiders; if he gets his share of the economic benefits which arise from his production, he may be trusted to use the proceeds for the social improvements which suit him best. Your Commissioners rest the case for good roads upon the farmer's economic importance in the Province. Good roads will enable him to increase his output, and the entire community will be benefited.

Let us look more closely at the relation between the city and the farmer. First of all there is the very plain fact that the farmer is a large consumer of manufactures which do much to maintain the cities. In the Dominion in 1911, the following articles which depend almost wholly upon the rural districts for their market were manufactured.

Material.	Value of Product.
Agricultural implements	\$19,115,894 00
Axes and tools	1,841,143 00
Carriages and wagons	7,920,567 00
Carriage and wagon materials	2,865,618 00
Cream separators	632,256 00
Harness and saddlery	1,971,162 00
Incubators	154,550 00
Pumps and windmills	1,361,046 00
Seed cleaning and preparing	1,484,485 00
Whips	123,500 00
Wire fencing	2,170,844 00
	<hr/>
	\$39,641,065 00

And of course these give but the merest glimpse of the purchases by country from town. But this consideration only opens the subject. The city has a stake in agriculture in the matter of local trade or shopping, and in regard to its food supply. Around every city extends a belt of farming country which is in peculiarly intimate relations with it. Much of the food consumed in the city comes from that belt; the men who grow that food are customers of the city's merchants and swell its trade. These adjacent farmers, economically and even socially considered, tend to become citizens of the city rather than of the rural municipalities within which their houses are situated, and exceedingly important citizens in the eyes of bankers, merchants and business men generally. It is not easy to estimate the width of this belt within which relations are especially intimate, but under present conditions, Your Commissioners are disposed to regard it as about seven miles.

On the basis of the present average value per acre of farm produce in Ontario, the adoption of improved methods of production within the area bounded by a circle seven miles from the market centre would result in an increase in the value of agricultural products within that area amounting to over \$1,400,000 annually. Such an increase would give a tremendous impetus to the activities of every business in the city. What centre would not do its utmost to secure the location within its bounds of an industry bringing \$1,400,000 annually into the community? A city may have a variety of well-established manufacturing concerns, but unless it can also point to a well-developed adjacent agricultural industry, the products of which have been made easily available, it is lacking in a most important factor in its growth.

Of the two parties in these relations, the city has the most to gain. All movements designed to help the neighbouring farmers rebound upon the city, to its advantage. The growing of market produce, for example, in the vicinity of large centres of population is of tremendous importance to the people who live in them. It accordingly is to be considered whether a policy of urban municipal administration which omits to take account of the interests of the adjacent farming community is not negligent of one of the most important factors in the town's development. Of any industry in which it may take an interest, towards which it may contribute, or for which it may make a material sacrifice, the industry of agriculture, especially in the immediate neighbourhood of the city, has a preferred claim. Cities have practised the bonusing of other industries contributing in various degrees to their growth. They would do well to recognize the fact that the farmer is an integral part of their life, and to make the adjacent farming community one of their assets. A city which allows its administrative attention to extend no further than its immediate boundaries has not yet awakened to its own best interests.

In speaking before the Commission at their meeting on November 24th, 1913, Colonel W. N. Ponton, President of the Associated Boards of Trade for the Province, declared in regard to Belleville, "We are not only from the city. The Board of Trade has reached out to farmers, dairymen and fruit growers, and all are members. We have endeavoured to draw in the country and their interest, and in the administration of the work committed to the Boards of Trade, to share with the city the privilege of considering matters having regard to the development of the country, irrespective of politics."

Mr. John Elliott, President of the local Board of Trade, said, "We of the Belleville Board of Trade have discussed this matter a great deal. We feel the welfare of this city, to a large extent, depends on the avenues of trade furnished us by way of good roads, to enable our friends to come a distance of thirty miles to our market. The Belleville market is well known, one of the best in the Province. We have farmers coming here over thirty miles on Saturday mornings. We feel the welfare of the city is bound up in transportation. We require a greater amount of food to reduce the high cost of living in this city. We want to have the greatest good for the greatest number by giving us good roads, where we can give the farmers twenty-five or thirty-five miles from Belleville, an opportunity to market their product along the same lines as those who live within a radius of ten or twelve miles from the city."

(b) The City and Roads

All classes of people are deeply interested in good roads, as everything they consume and wear comes from the land and must pass over some piece of highway. A distinguished statesman in the United States has substantially stated, "You cannot increase the prosperity of the country as a whole without increasing its highway facilities." Highly productive farms can never be made profitable adjoining poor roads, and the first agency towards increasing the prosperity of the farmer is to create the cheapest outlet for his products to the market. Canadian statistics for 1912 indicate that one dollar will carry a ton of the average freight by railway one hundred and thirty miles, and on water, five hundred and fifteen miles. The former is the average of high grade and low grade traffic, car lot and less than car lot, long haul and short haul, while the latter is relatively a limited number of commodities, moving in large bulk, on long water hauls. As to the cost of haulage per ton by horse-drawn vehicles, there is some general understanding that on very ordinary roads, four miles is the limit for one dollar. It can hardly be disputed that a team will haul three tons easier on a hard smooth road, than one ton on a bad road.

But this is the twentieth century and the motor is here to stay. It, however, requires good roads; on them the motor will make twenty miles with a reasonable load as quickly as a team can cover six miles on good roads, or say three miles on poor ones. The "home market" of the farmer thereby may become enlarged to an extent he hardly realizes to-day. Give him a vehicle which can transport a load cheaply for twenty or thirty miles in the time now taken for ten, and you give him a choice of urban centres in which to do his marketing. Motors consequently will be a great factor in the development of the country, provided the roads are made suitable for them. The area of production of food stuffs will be increased, and the profits per acre increased to the farmers. In a very interesting investigation carried on by Clyde Lyndon King, Ph.D., for the Mayor of Philadelphia, in 1912, it was shown that the spread between what the farmer received for certain foodstuffs, and what the consumer paid, varied from sixty-seven per cent. to two hundred and sixty-five per cent. These investigations of course were only carried on locally.

In dealing with these figures, in an article on the cost of distributing food products which appeared in the *Annals of the American Academy of Political and Social Science* of July last, Dr. King, referring to "what these costs mean to the consumer and farmer," in part stated as follows:

"It is difficult for the imagination to grasp just what these costs of distributing farm produce mean in lower prices to farmers and higher prices to consumers. The consumers of New York City pay annually around \$645,000,000 for food. This food costs at the terminal \$350,000,000. That is to say, the people of New York City are paying over \$150,000,000 each year to have their foodstuffs taken from the terminal to their kitchens. At a cost of fourteen cents per meal per person for all classes in Philadelphia, high and low, rich and poor, Philadelphia citizens are spending \$225,000,000 every year for food. Of this amount they pay something less than \$75,000,000 each year in cartage and delivery costs and in retailers' profits.

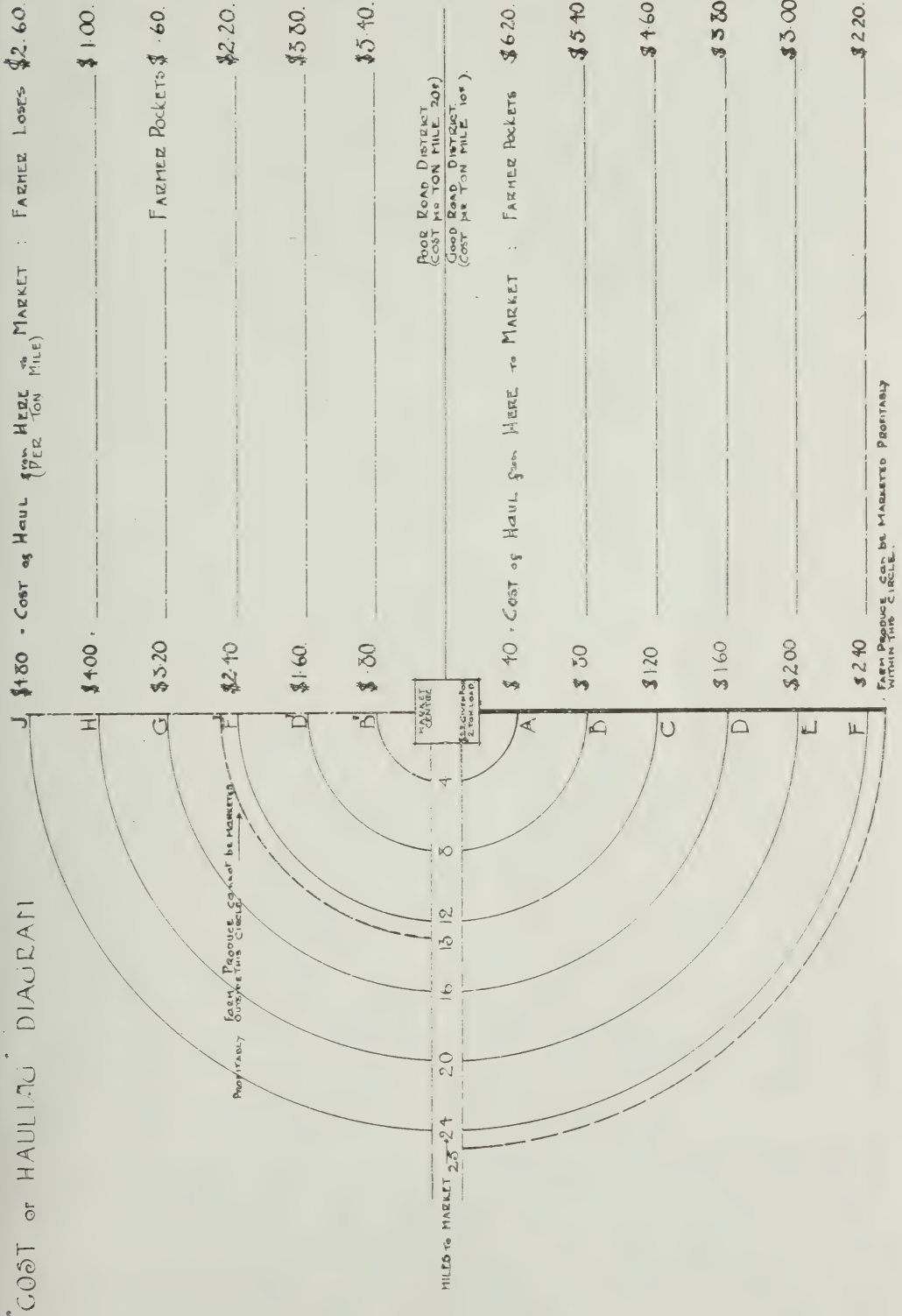
"Of the \$146,000,000 paid annually by the people of New York City for milk, eggs, onions and potatoes, less than \$50,000,000 was received by the men who raised these crops. For certain produce for which the eastern farmer last summer received \$1.00, the Philadelphia consumer paid \$2.35.

"Is it not needless to point out other results of this method of distributing food products? Is it not clear that the interests of every farmer and every consumer point to the necessity for developing a cheaper method of food distribution, whereby at least much of the handling and the profits of a few of the middlemen may be eliminated? All are interested in cheaper costs of food distribution. The farmer, is of course, because it means higher prices. The consumer is because that is his only hope for lower prices. But so is the city; and the labour employer."

Dr. King is responsible for the statement, "It is mainly in the development of direct shipments to relatively nearby markets that the farmer's returns can be increased and consumers' prices lowered." It is, however, not fair to charge all of the great spread, including transportation charges, as between producer and consumer to the middleman, as many are now doing when looking for the causes of the present cost of living. The residents of the cities, especially the property owners, are in a measure responsible for some of that spread, because they having joined the real estate man in taking ten dollar bills in the shape of city property, have committed forgery by coolly raising the bills to one hundred dollars. That at once creates new conditions for all the city dwellers, owing to a return being immediately demanded on that watered stock.

The cartage of food products by the individual farmer from the farm to some market as is now the custom will always be the most expensive method. The time is coming when the motor will play an important part in co-operative marketing by farmers. That, however, must wait until proper road facilities exist for the motor. There is no class of the people who need co-operation more than our farmers. It will not alone benefit their pockets, but it will create new social conditions, making farm life more agreeable than at present. Important strides have been made in that respect in Europe, and while this subject may be regarded as having no place in a report on roads, still improved highways and good farming must go hand in hand in the development of the Province. The doing of things, whatever they may be in this age of competition, must be reduced as nearly as possible to a science. At present it is practically impossible to get from the farmer clear and concise figures of haulage cost. This is not offered in any sense of criticism. If such figures were available it would be possible to compile most interesting statements, showing the annual loss or gain on roads of various grades, to each township, which could easily be determined owing to the total agricultural production being fairly well known. The suggestion is offered that prizes should be given at agricultural fairs for the best statements supplied by farmers as to road haulage, on forms to be furnished by the Road Department of the Province. How many farmers are there who attempt to figure out costs and fix values on their time as well as that of their teams? And yet what other business could be expected to succeed in these strenuous times without such a method? Co-operation amongst the farmers would do more to further the good roads movement of Ontario than any other agency.

There are other reasons also, all more or less domestic. The life of any country, like that of every other life, is an organism, in which each part must perform its function, and the relation between these parts remains constant. If the city goes up in the grade of prosperity, the country districts must do likewise.



If not, unnatural conditions are developed, and that is largely the situation to-day. Furthermore, there will never be maintained a proper equilibrium between the city and country in North America until farm life is made more attractive. Therefore, while the city's difficulty—high cost of living—may to a certain extent be controlled by other means, for instance, by curbing extravagance, the partner of the tremendous "boom" that spread over the northern part of this continent in recent years—still the difficulty will never be solved until the farm life of the country is vitalized. And that is absolutely impossible without good roads—another reason why the city must assist in getting them. Where has anyone ever seen a thriving city with mud roads? None could continue to exist under such conditions. It is only necessary to state a case to see what it means and realize the effects of a parallel situation which largely actually exists in the country.

PLATE-A



PLATE B.

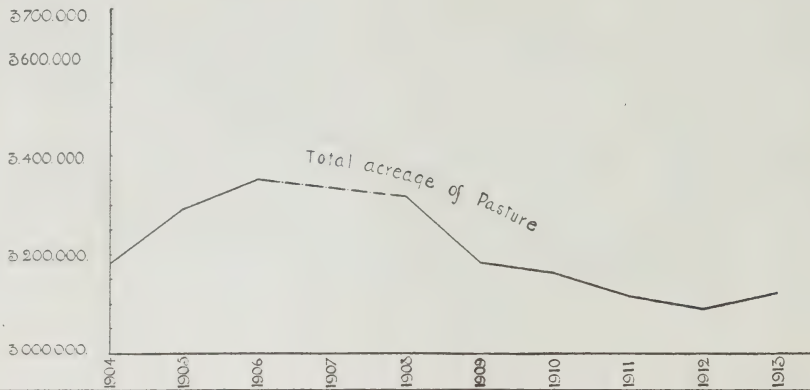


PLATE C.

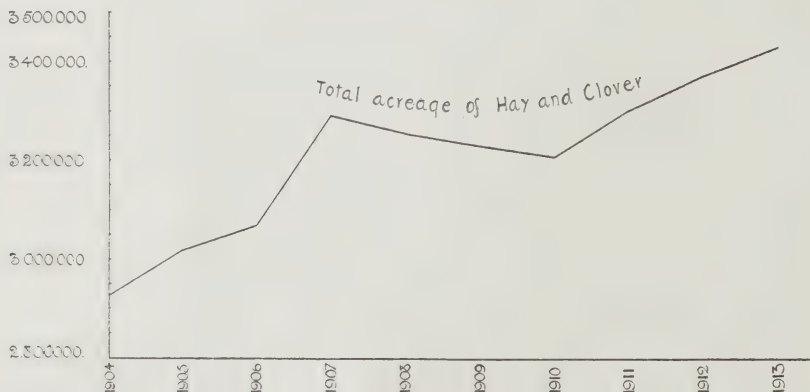
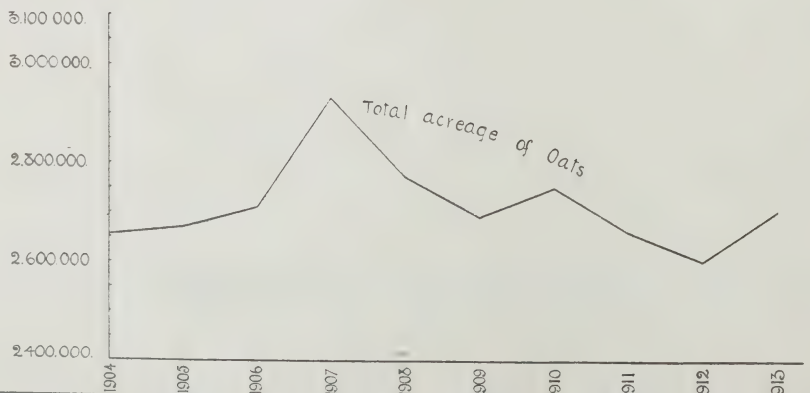


PLATE D.



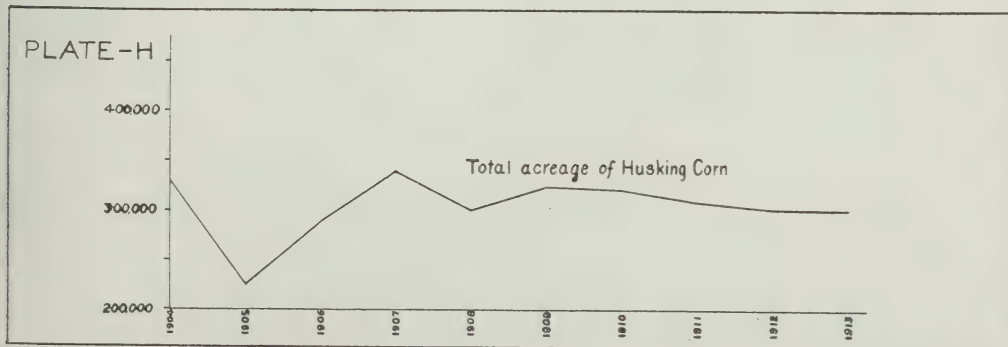
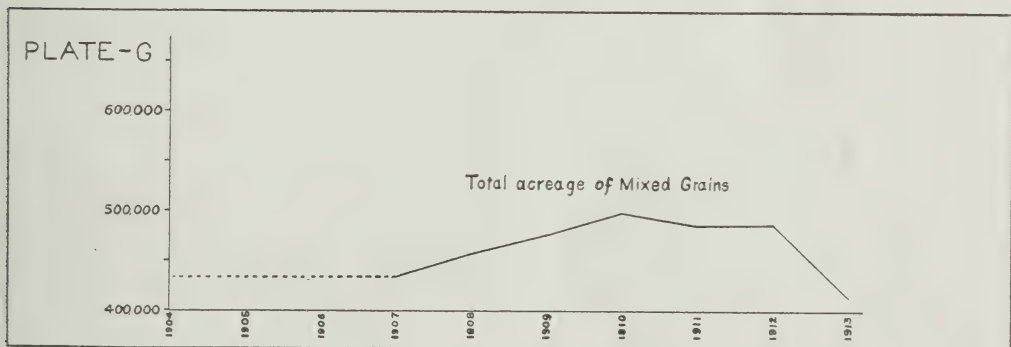
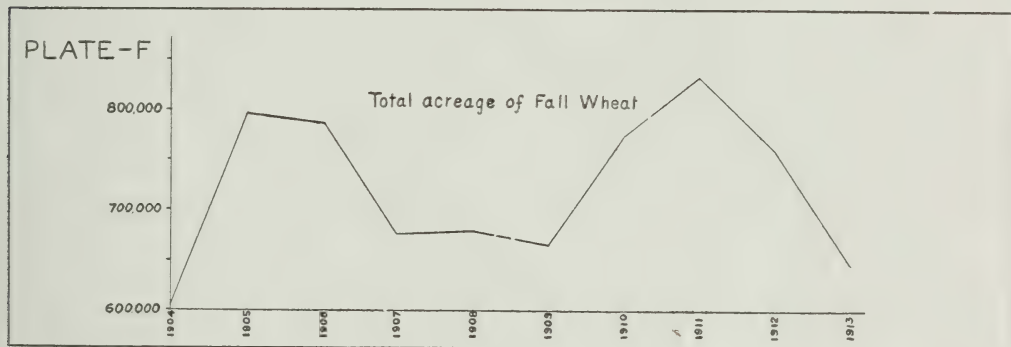
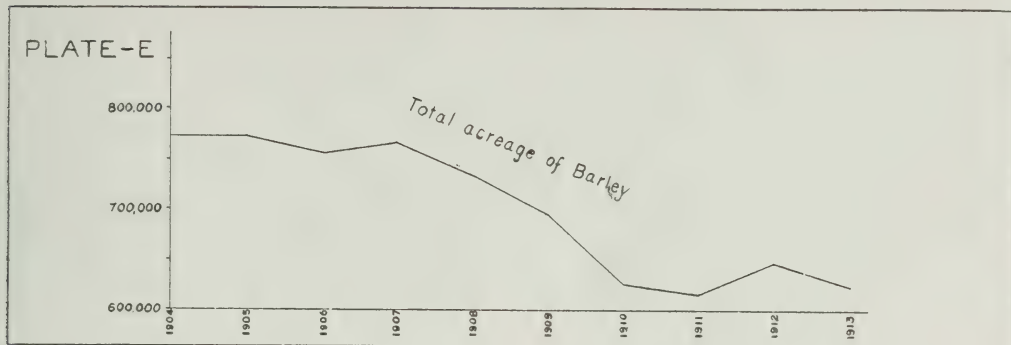


PLATE J

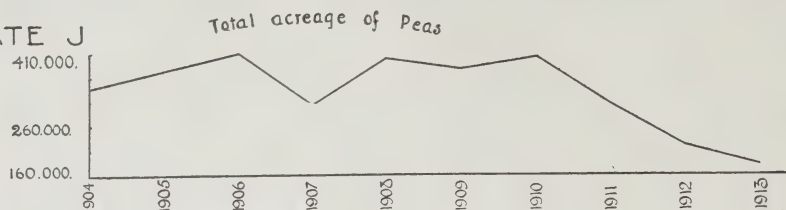


PLATE K.

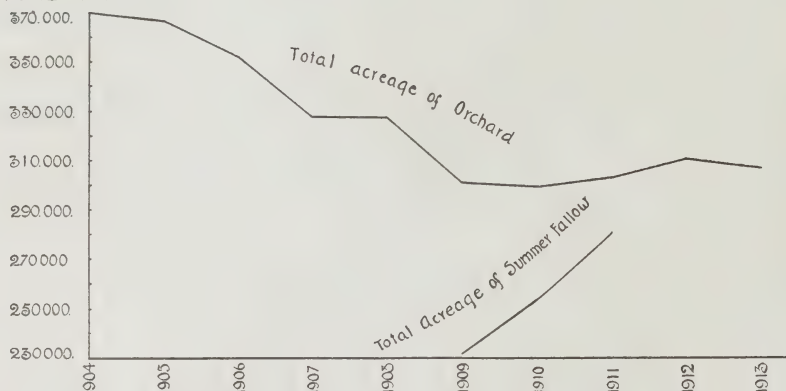


PLATE L.

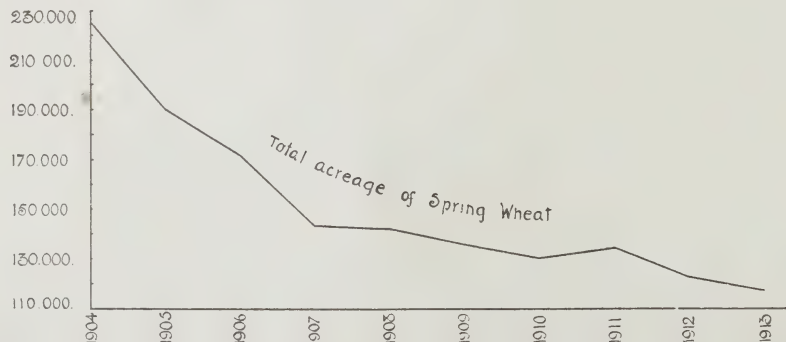


PLATE M

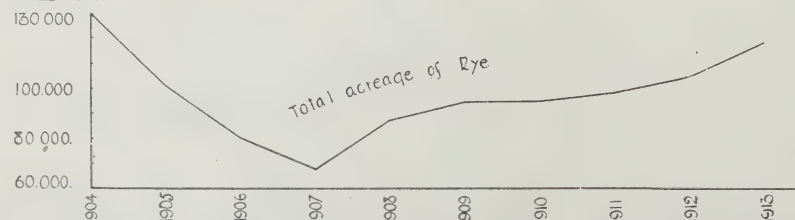


PLATE N .

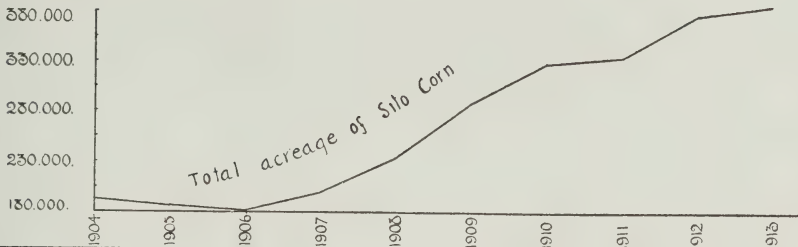


PLATE O



PLATE P .

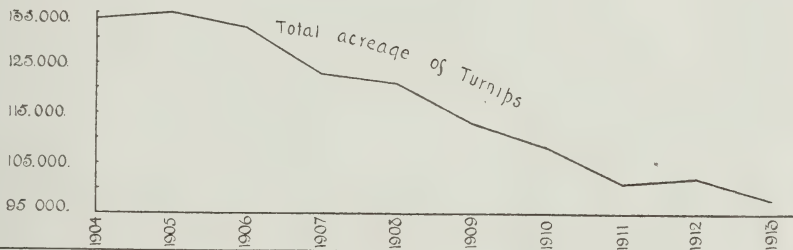
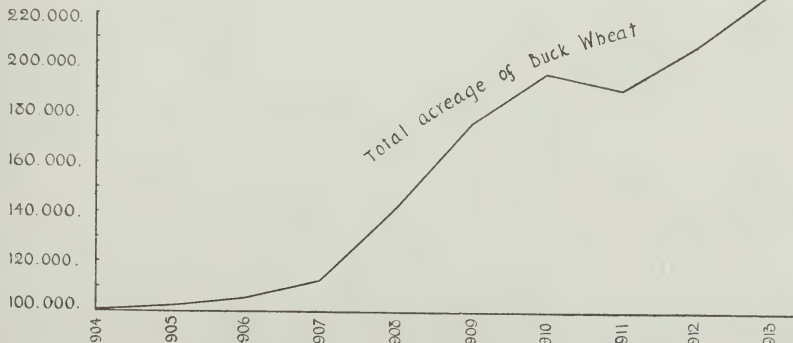


PLATE R .



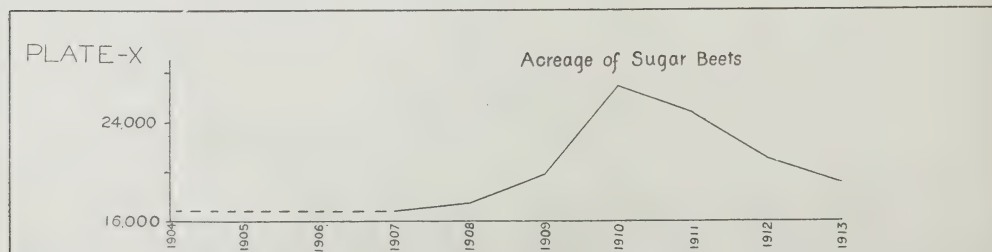
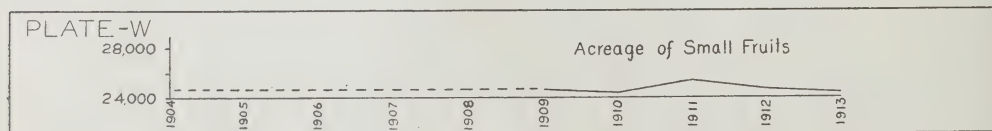
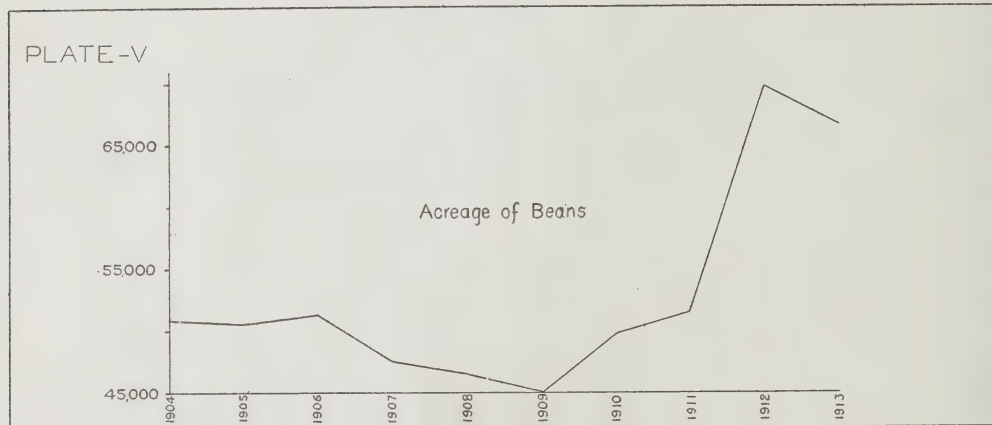
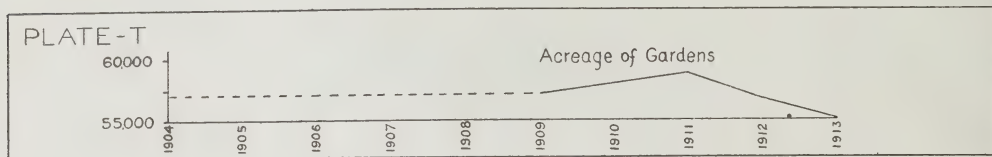
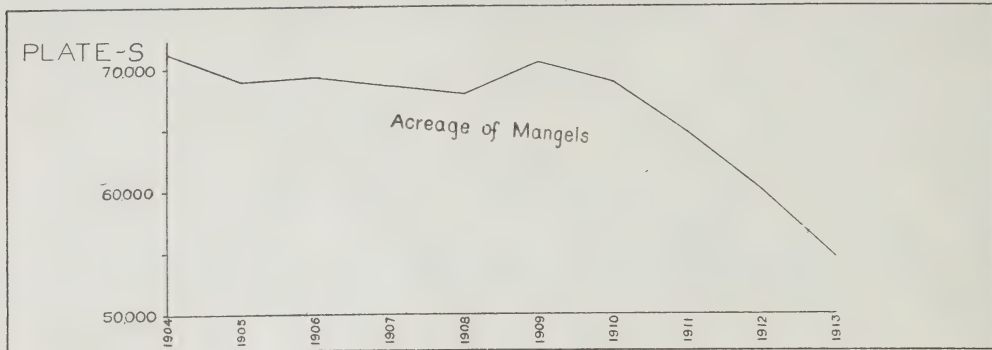


PLATE X(I).

ASSUMING THAT PROVINCE LIVES ON
PRODUCTS OF ITS OWN FARMS :
LENGTH of SOLID LINE = ACREAGE. NECESSARY TO
SATISFY LOCAL DEMAND
LENGTH of DOTTED LINE = SURPLUS ACREAGE .

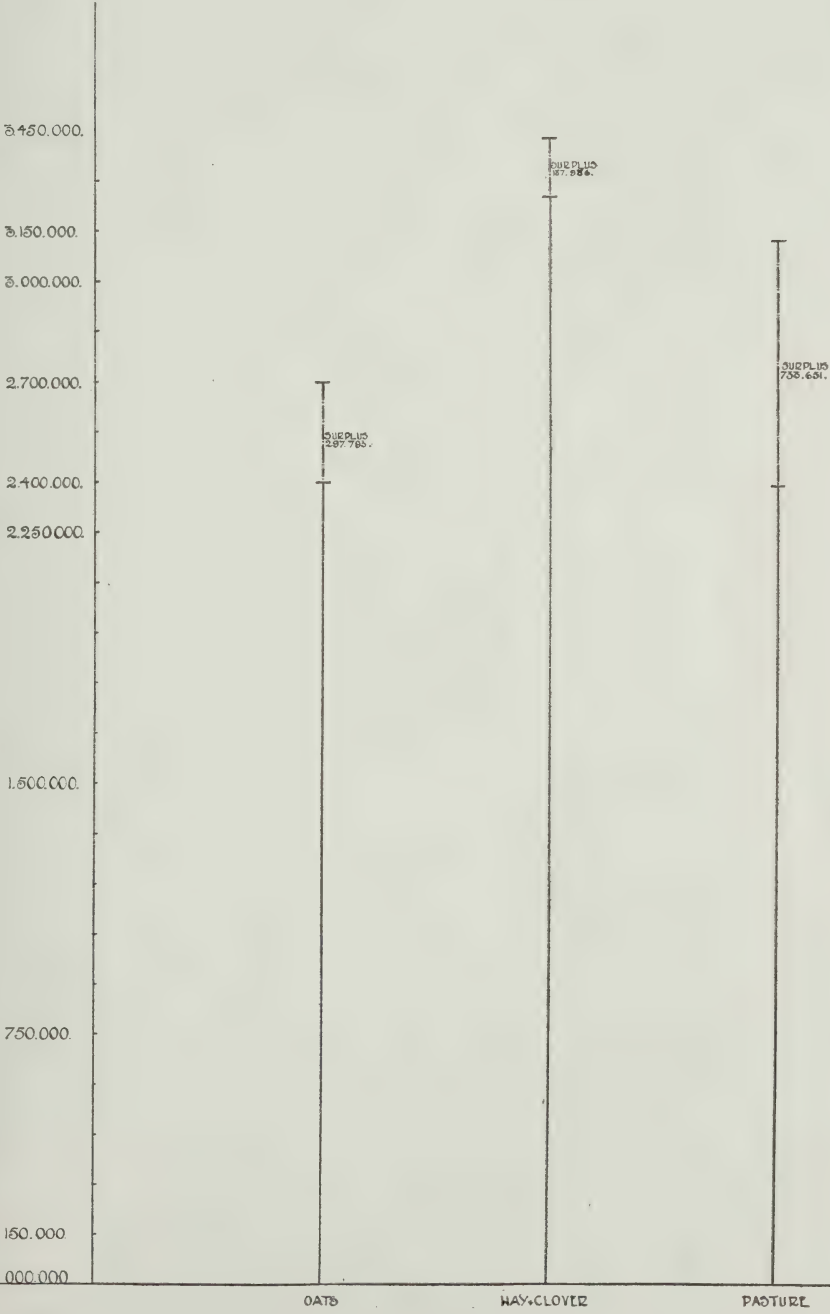


PLATE 7(2)

ASSUMING THAT PROVINCE LIVES ON
PRODUCTS OF ITS OWN FARMS :

LENGTH OF SOLID LINE = ACREAGE NECESSARY TO
SATISFY LOCAL DEMAND

LENGTH OF DOTTED LINE = SURPLUS ACREAGE.

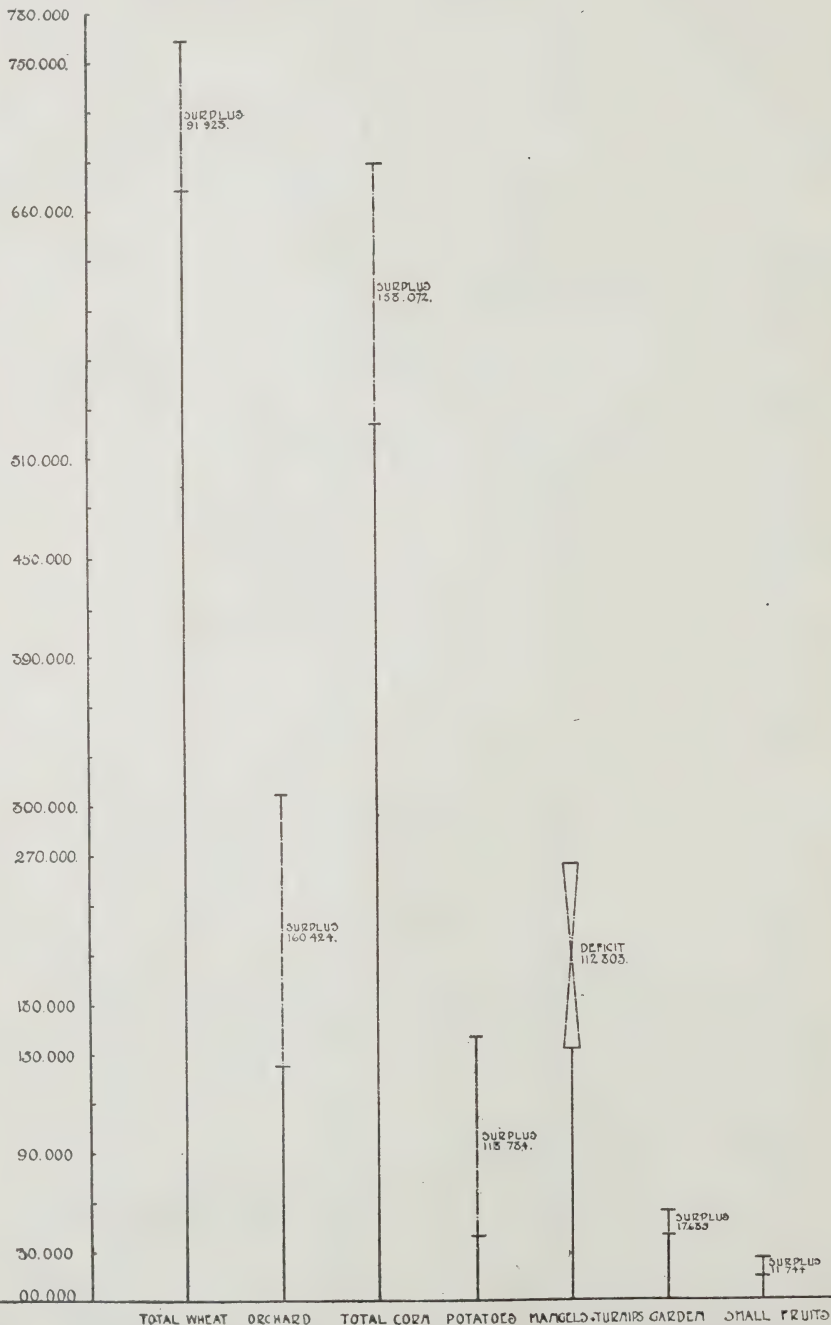
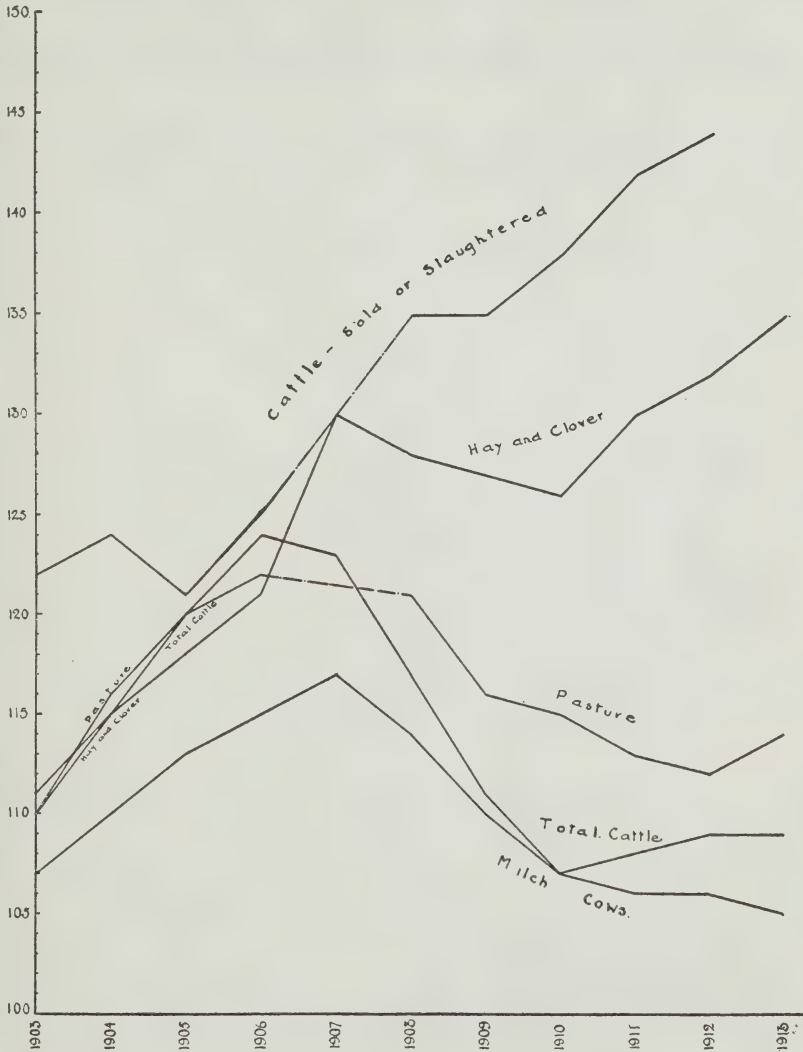


PLATE Z :

STOCK, HAY and PASTURE CHART
SHOWING PROPORTIONAL VARIATIONS
of ITEMS LISTED



APPENDIX No. 2

Municipal and other Resolutions Presented to the Commission

The following resolutions were presented to the Commission by certain Municipal Councils and Associations, viz.:—

I. THE COUNTY COUNCILS OF

1. Bruce.
2. Elgin.
3. Essex.
4. Halton.
5. Hastings.
6. Middlesex.
7. Norfolk.
8. Ontario.
9. Stormont, Dundas and Glengarry.
10. Victoria.
11. Waterloo.
12. Wellington.
13. Wentworth.
14. York.
15. United Resolution of Wentworth, Norfolk, Brant, Welland, Haldimand and Lincoln.

II. THE TOWNSHIP COUNCILS OF

1. Arthur.
2. Nelson.
3. Puslinch.
4. Toronto.
5. Williamsburg.
6. Municipalities on Kingston Road, (viz., Townships of Reach and Darlington; Towns of Whitby, Oshawa and Port Hope).

III THE TOWN AND VILLAGE COUNCILS OF

1. Bronte.
2. Burlington.
3. Merritton and Port Dalhousie.
4. Oakville.

IV. THE COUNCIL OF THE MUNSEYS AND CHIPPEWAS OF
The Caradoc Indian Reserve.

V. THE BOARDS OF TRADE OF

1. Guelph.
2. Hamilton (with Manufacturers' Association).
3. Oakville.
4. Ontario Associated Boards of Trade.

VI. MOTOR ASSOCIATIONS.

1. Hamilton Automobile Club.
2. Ottawa Valley Motor Car Association.

VII. ONTARIO GOOD ROADS ASSOCIATION.

I. COUNTY COUNCIL OF

(1) BRUCE.

"We, your Committee (*i.e.*, of *Bruce County Council*) to which the proposed scheme of Provincial Good Roads has been referred, beg leave to report that if such a scheme is to be proceeded with that the following should be the basis:—

1. MUNICIPAL CONTROL: That the municipalities should have the control of designating, construction and maintenance of such roads, subject to such regulations as may be deemed advisable by the Department of Public Works.

2. CONTROL OF EXPENDITURES: That the expenditure on such designated roads should be under the supervision of a commissioner or commissioners appointed by the municipalities interested.

3. FINANCING: That the Provincial Government provide 50 per cent. of the necessary funds. That the increased grants required from the Provincial Treasury be largely provided for by an increase in the taxation of railway property and an increase in the auto tax based upon the horse power of the machine. That cities and towns separated from the counties for municipal purposes contribute 25 per cent. of the cost of construction and maintenance of such designated roads leading into such cities and towns. That the balance of funds required for the construction and maintenance of such designated roads be provided by the municipalities in which such roads are situated, and the cities, towns and villages to which such roads lead.

4. FEDERAL AID: That any aid given to public highways by the Federal Government should be allotted to the municipalities or counties on the basis of assessed value.

5. That we are strongly opposed to the proposed scheme of a large expenditure of public money for the construction of a Provincial System of Trunk roads."

(2) ELGIN.

That the Committee appointed to attend the Public Roads and Highways Commission at London, be instructed to include the following in their recommendations:—

(1) That the provisions of the Highway Improvement Act as to designation and construction of roads be continued for the improvement of the highways of the Province.

(2) That the Highways assumed for improvement should be classified in accordance with the estimated present and future traffic on each, viz.:

Main Highways,
County Roads,

and that the specifications for the construction of each be varied accordingly.

(3) That the cost of construction should be

Paid by the Province	one-half;
Paid by the County	one-third;
Paid by the Township, etc.	one-sixth;

in the proportions specified, or as may be determined by the Highway Improvement Act, and that an assessment for benefit should be levied on the properties along and adjacent to improved roads under provisions similar to those contained in the Municipal Drainage Act and that for this purpose each local municipality be considered an improvement area—the amount so assessed to be deducted from that payable by the township or local municipality.

(4) That the improved highways should be maintained by the Province, County and Township, or other local municipality in the proportions paid for original construction.

(5) That as a source of revenue for highway maintenance purposes, all motor vehicles be taxed at a rate per horse power, and that the Supplementary Revenue Act be amended by increasing the taxation of railways.

(6) That all specifications for Highway Improvement should be prepared by a competent engineer and approved by Provincial Highway Department and that all work undertaken should be under the supervision of approved engineers appointed by the County Councils.

(7) That the use of wagons with wide tires be made compulsory on all improved highways.

III. ESSEX.

(Telegram)

Owing to Essex County Council meeting to-day it will not be possible to send delegates to your meeting. But this county council believes that the Highway Improvement Act should be so amended that towns and cities not separated from counties for municipal purposes should be included in any county road improvement scheme, on the same basis and conditions as towns and cities not separated from counties for municipal purposes; also so amend the Act so that the Government would pay the same proportion for maintenance that they do for construction.

(Sgd.) ROBERT ATKINS, Warden.

(4) HALTON.

*Moved by Chas. Reedhead,
Seconded by M. C. Smith,*

And Resolved that we, the Good Roads Committee of Halton, wish to place ourselves upon record respectfully urging upon the Ontario Provincial Highways Commission and the Honourable Doctor Reaume, Minister of Public Works, the great necessity for the early construction of a permanent highway between Toronto and Hamilton. The greater portion of the Lake Shore Road, that extends through the County of Halton, is in a most deplorable condition and portions of this road are almost impassable. The ratepayers have waited patiently for two years, believing that a permanent highway would be built between Toronto and Hamilton. Our Committee feel that if a permanent highway is not to be built, the Commission of the Honourable Minister of Public Works should so advise us, as it is imperative that a road be built at least on portions of the Lake Shore Road through this County the present year. The municipalities could not undertake the construction of a permanent roadway, therefore would have to put down the ordinary macadamized road, and this would appear like a waste of money as the traffic in general has become so heavy over this road that an ordinary macadam road would only last for a year or two. The County of Halton, also the Councils of the Town of Oakville and the Village of Burlington and the Townships of Nelson and Trafalgar have already forwarded resolution to the Honourable the Minister of Public Works, urging the construction of this highway, and our object in passing this resolution is to bring to your attention the impassable condition of the Lake Shore Road, and to further urge that an announcement be made at the earliest date possible in respect to the construction of a permanent highway between Toronto and Hamilton. *Carried.*

(5) HASTINGS.

To the Roads Commission of the Province of Ontario:

GENTLEMEN,—The Council of the County of Hastings submits for your consideration the following recommendations:—

(1) That legislation be passed prohibiting the manufacture of new vehicles, and the removal of old ones, carrying 1,500 pounds or over, of a less width of tire than four inches, and that five years only be allowed for changing to the same width the tires of existing vehicles of similar capacity.

(2) That a tax of 50 cents per horse-power be imposed in lieu of the existing license fee upon all autos up to and including twenty horse-power; 75 cents per horse-power on autos above 20 horse-power up to and including those of 30 horse-power, and \$1.00 per horse-power upon all autos above 30 horse-power, and that the money so raised be applied for highway improvement.

(3) That expenditures hereafter made upon all County Roads and Bridges shall be borne one-third by the County in which they are situated and two-thirds by the Government of the Province.

(4) That it is of supreme importance that the cost of maintenance should be borne in the same proportions as the cost of construction by the County and Province respectively.

(5) That, as we consider County Roads should be constructed in such places only as will be in the general interest, we are opposed to a frontage tax.

(6) That the Highways connecting the producer with the producer's market receive first consideration, and that such roads be selected where the Council of each County shall approve.

(6) MIDDLESEX.

(1) We approve of Provincial and Federal Aid toward construction and maintenance of Highways.

(2) We disapprove of Federal or Provincial management and control of Highways, except under special conditions, believing such aid or assistance as the Federal Government gives should be paid direct to the Provincial Government and by them, together with their contributions, be paid in turn to the County or Township Councils for Highway Improvement under regulations prepared by the Provincial Highway Department of Public Works, and that all works of Road Improvement should be under the direct management of Commissions or Commissioners appointed and directed by the County or Township Councils, supervised by the Provincial Engineers and Inspectors.

(3) That the leading roads to market centres within the County should be managed and controlled by the County Councils and roads of less importance by the Township Councils.

(4) We believe in the use of gravel for road construction on all roads within the County where a good quality of gravel is available and further, that any plan or scheme that would require or compel the construction of a more expensive class of road than a properly constructed gravel road in localities where gravel is easily accessible would be detrimental to the interest of the ratepayers of the County.

(5) That where gravel is expensive in comparison with other materials such as crushed stone or where a good quality of gravel is not available we believe a plan should be adopted to build a good road such as crushed stone or other higher class road.

(6) Maintenance of highways is infinitely more important than construction, therefore any scheme that fails to provide for an adequate and systematic plan for maintenance of highway must inevitably fail to produce results.

(7) Government grants should amount to at least 50 per cent. of the cost of construction and rebuilding.

(8) Under the Act for Improvement of Highways when a road is in need of repair it must be practically rebuilt in order to receive the Government grant on the cost of the work. This undesirable condition would be overcome by the Government recognizing the importance of repairing and maintaining highways by paying 50 per cent. of the cost of repairs and maintenance of all roads that have been properly constructed and towards which they are contributing for construction.

(9) In regard to assessment on frontage, we submit that in this County the benefit to farms along such improved roads or near them would not be sufficient to justify the expense and complications such a plan would involve.

(10) Villages and towns not separated from the County for municipal purposes should receive equal benefit from the Government plan as is derived by the Township Municipalities through the assumption by the County of their main roads, and all moneys levied upon such villages and towns for the purpose of County Road Improvement should, as nearly as possible, be returned to them by way of grants.

(11) In the matter of deciding what roads should be placed under control of the County Councils, the Councils of the Townships should be consulted.

(12) Provision should be made so that municipalities cannot be held liable for accidents on roads under construction or after construction, provided the work has been done in compliance with the regulations prepared by the Department of Public Works.

(7) NORFOLK.

Resolution on motion of Mr. Squire, seconded by Mr. Jones.

Ordered, That the Clerk be authorized to send a copy of the following memorial to the Chairman of the Public Roads and Highways Commission as expressing the opinion of the County Council of the County of Norfolk.

We, the County Council of the County of Norfolk assembled, are of the opinion that any Legislation framed for the purpose of improving Public Highways should—

(1) Arrange for the expenditure of public money whether derived from the Federal or Provincial Treasurers in order that the greatest good shall accrue to the greatest number.

(2) That the producer be assisted as far as possible to have better roads to reach his natural market.

(3) That Government aid be given for the upkeep of permanent roads as well as for their construction.

(4) That the automobile should bear a share of the cost of any expenditure on improved highways. Such tax should be on a graduated scale—the light power car paying a smaller tax than the heavy power car. Such moneys to be applied to improvement of highways.

(5) That should the Government consider it advisable to build main or Government Highways, they should be constructed linking every County in Old Ontario.

(6) That the kind of roads to be built in each County shall be decided upon by the Government.

(7) Thus roads which are subject to heavy traffic may be required to be constructed superior to roads which will be subject to lighter traffic.

(8) That the Government arrange to borrow the money which will be used in the construction of Permanent Highways by the various Municipalities and re-loan the same to them at the same rate of interest as paid.

(9) That every assistance be given to improve the unsurfaced roads of our country and that the municipalities be furnished with information which may tend to such improvement.

(10) That streets in villages or towns (having a population of 1,500 or under) which form a link in or in continuation of a system of improved roads shall be made a part of such County Road System.

(11) That Government aid to the County Road System be increased to at least 50 per cent. of the total of such roads.

(12) That all specifications for Highway Improvement should be prepared by a competent Engineer, and approved of by the Provincial Highway Department and that all work undertaken should be under the supervision of approved Engineers appointed by the County Council.

(13) That we believe in assessment for benefit in connection with the improvement of Public Highways.

(14) That such assessment shall be levied on the properties along and adjacent to improved roads under provisions similar to those contained in the Municipal Drainage Act, and for this purpose each local municipality be considered an improvement area, the amount so assumed to be deducted from that payable by the Township or local Municipality.

(8) ONTARIO.

Moved by Mr. Gerow,

Seconded by Mr. Wetheral.

Whereas a general movement in the Province and in the Dominion at large is being manifested for the construction of highways adequate to modern traffic,

And Whereas the building of such highways would facilitate such communication and prove a great economic saving and social advantage to the Province,

And Whereas the Province of Ontario has fifty thousand miles of public roads of which less than fifty per cent., if permanently constructed, would accommodate eighty per cent. of the traffic;

Be it therefore resolved,

(1) That this Body put itself on record as favouring highway betterment, and the raising of the standard of road construction in general, and as urging the necessity of constructing leading highways uniting county systems, and the establishment of an organization for permanently maintaining the same, under Government supervision; the Province in each instance contributing at least 50 per cent. and the municipalities the balance.

(2) And that the Clerk forward a copy of this Resolution to the Honourable the Minister of Public Works for this Province and the Secretary of the Provincial Highway Commission.

(9) STORMONT, DUNDAS AND GLENGARRY.

To the Minister of Public Works:

The memorial of the Counties' Council of the United Counties of Stormont, Dundas and Glengarry in Council assembled, humbly sheweth:

That in the opinion of Your Petitioners, the time has arrived when the proportion of Aid granted by the Province towards the cost of construction of County systems of Good Roads, under the "Act for Improvement of Public Highways" should be increased from one-third, as heretofore, to one-half of the entire expense so incurred. This, in our opinion, is about the only effective way of overcoming the antagonism which undoubtedly exists on the part of Township Municipalities towards such an undertaking on the part of Counties, and the expenditure of the moneys under County supervision.

That Your Petitioners are also of the opinion that the question of the subsequent maintenance of a County system of Good Roads exclusively by the County or Counties after initial construction is another obstacle to the undertaking of such a scheme in many Counties, and certainly in this Union. They are firmly of the opinion that the Province should contribute in the same proportion (one-half, or, at the very least, one-third) to the maintenance and repair of County Road systems when constructed.

That the wear upon Highway surfaces, when improved, by high power automobiles going at speed, will be considerable, and will more than any one other item, give rise to necessity for repairs.

Your Petitioners therefore think that the law regulating the licensing of these machines should be amended and a heavier license fee imposed, graduated according to the horse power of the machine, and that the fund thereby created should be utilized solely for the purpose of contributing to the maintenance of County systems aforesaid after construction, together with any such further sums as may be necessary to make up the necessary proportion (one-third or one-half).

Your Petitioners therefore pray,

That the suggestions above made be carefully considered by your Department and by the Board of Highway Commissioners with a view of having them embodied in future amendments, if approved of.

And Your Petitioners as in duty bound will ever pray.

(10) VICTORIA.

Statement adopted by the Council of the County of Victoria, January 31st, 1914, for the Public Roads and Highways Commission of Ontario:—

(a) The County of Victoria consists of two distinct classes of Townships, one comprising the first and second ranges consisting of the six rural municipalities of Mariposa, Ops, Emily, Verulam, Fenelon, and Eldon, and including within their bounds the county town and all the other urban municipalities. These rank among the most important in the Province in value and population. The other comprises the townships of Somerville, Bexley, Carden, Dalton, Laxton, Digby and Longford, forming five municipalities, which rank in all respects with the townships in the Provisional County of Haliburton and the district of Muskoka to which they extend.

(b) The two front ranges are geographically so situated as to form a territory in which a continuous road system might with advantage be established.

(c) The other municipalities both in value and location are so situated that they could not be included in such a system.

(d) The latter municipalities should be included in a zone or area in which the bridges wholly and in some degree the highways apart from the bridges should be built and maintained by the Province.

(e) It is unreasonable and unjust that the County of Victoria should be burdened, as indeed it is grievously burdened, with the building of first class bridges in the municipalities referred to while in townships of similar quality but not in fully organized counties, the building of such bridges is assumed wholly by the Province.

(f) The latter municipalities contribute only \$65.42 of each \$1,000 of the rate for county purposes. During the past ten years over five-twelfths of the whole expenditure on bridges in the county has been devoted to structures in these municipalities. To illustrate the effect—in the past seven years three bridges have been erected of concrete and steel which have cost the County \$18,500, and towards the cost these municipalities have been able to contribute in taxation only \$1,210.

(g) It cannot be too strongly impressed upon the Commission and the Government that a decided change of policy is demanded by the position in which the County of Victoria is placed by reason of the fact that two-fifths of its area, and that in one block, is of the same quality as townships in districts or not fully organized territory in which the Province bears the cost of bridges, while, as has been shown, the great cost of such works in the area in question has to be borne almost wholly by the municipalities in the two front ranges of townships in the County.

(h) The legislation that may result from the Report of the Commission should be so framed as to provide that the County of Victoria and Counties which are similarly situated would have the right to form a portion of the County into a good roads area to which the Act would apply as if it were a whole county, and that the remainder of the county should for the purposes of bridges and roads be included in a zone or territory in which the bridges, and to a reasonable extent, the roads would be built and maintained by the Province.

(11) WATERLOO.

Recommendation of the Roads and Bridges Committee adopted by the Municipal Council of the County of Waterloo:—

“That the attention of the Highway Commission be drawn to the advisability of amending the Highway Improvement Act, which now prohibits the County Road Superintendent from employing any municipal councillor in any capacity, in order that we may revert to the system of carrying on the county road work previously followed in this County.”

(12) WELLINGTON.

The County Council of the County of Wellington respectfully submit the following recommendations for the consideration of the Commission.

(1) That whereas it is generally conceded that 75 per cent. of the total vehicular traffic in this Province is served by 25 per cent. of the highways, the most travelled roads in each county being the highways converging on the principal market centres,

(2) We are of opinion that any system of County Roads assumed, or to be assumed, by any county should first include the highways leading into every market town in the County, thereby accommodating the ratepayers who contribute to the cost of building and maintaining the same and who in many cases seldom travel any other road than that leading to their own market town. And in counties where the roads already assumed do not provide such a system, provision should be made in the Highway Improvement Act whereby a portion of the roads already assumed shall be thrown back upon or revert to the local municipalities in which the same are situated and other mileage which would serve a greater number of people assumed in lieu thereof.

(3) That the proportion to be contributed by the Ontario Government for the construction of County Roads be increased to one-half the cost thereof, and in the event of any subsidy or subsidies being appropriated by the Parliament of the Dominion of Canada to be expended by or through the Provincial Legislature for highway improvement, then the proportion payable be increased to two-thirds the cost of such construction.

(4) That the Highway Improvement Act be amended so as to provide for the Government contributing a fair proportion of the annual cost of maintaining the constructed roads in an efficient state of repair and also for the purchase of new parts and repairs for road machinery.

(5) That the amount payable for licenses for automobiles and other motor vehicles be largely increased on some equitable basis according to the horse power, weight and usage thereof, and the revenue derived from this source transferred to a special account to be expended for road repairs only.

(6) That provision be made whereby cities and towns separated from the County for municipal purposes shall contribute a proper proportion of the cost of construction, maintenance and repair of County Roads leading to, or adjacent to, any such separated city or town.

(7) That provision be made for the employment of prison labour in the manufacture of road material and where possible for the construction of highways.

(8) That the Commission recommend that an effort be made by the Government to secure cheaper freight rates for the delivery of road material for the construction of good roads throughout the Province. Bad roads mean lack of communication, poor transportation, and a large annual loss in freight rates to the railway companies as well as millions of wealth to the farmers.

(9) That Section 6 of the Highway Improvement Act as amended be further amended by adding after the words "authorized by the Municipal Act" in the said Section 6 as amended, the following words:—

(a) "Or the Council may by by-law provide the money required by raising annually for a period not exceeding ten years an equal annual sum by annual county rate in the manner authorized by the Municipal Act," and further by adding at the end of the said Section 6, as amended, the following words:—

(b) "Provided that no by-law passed for raising annually, for a period not exceeding ten years, an equal amount annually as aforesaid, shall be repealed until the expiry of such period."

(10) That the Commission recommend that the Government provide the Municipal Council of any County taking advantage of the Highway Improvement Act with such sums of money as may be necessary to meet any expenditure on highways under the Act at a rate of interest not exceeding four per cent. per annum.

(13) WENTWORTH.

To the Warden and Councillors of the Municipal Council of the County of Wentworth.

GENTLEMEN,—Your Committee, appointed to inquire as to the expediency of continuing the present system of road administration as laid down by the Government Regulations as affecting the County of Wentworth, beg leave to report as follows:—

(1) We find the following conditions existing—the amount of money expended for construction and maintenance of the County Highway System, including the cost of machinery necessary to maintain the system in the present unsatisfactory condition, to be \$92,360 and \$120,072 respectively or a total of \$212,432 during the years 1908 and 1913 inclusive to date.

(2) We, therefore, recommend the Council to strongly urge upon the Commission the absolute necessity for providing some financial assistance to be expended towards the maintenance of the highways constructed under the Government regulations.

(3) We further recommend the calling of the Commission's attention to a very desirable amendment which we deem necessary in the interests of good highways, as follows:—where the conditions referred to in Section 12, Ch. 11, 2 George V, 1912, arise that the following be inserted after the word "locality" in line nine—"Council of any city or separate town shall provide such a proportion of the money deemed necessary by the Ontario Highways Commission to construct such a highway as they would approve, said highway to be constructed under the supervision of the said Commission who shall apportion the percentage of expenditure the affected municipalities shall respectively be required to pay."



The Plains Road in Wentworth, near Hamilton.



Hill-cutting in Carleton County.

(14) YORK.

Moved by H. Ramsden,

Seconded by W. Keith.

That Whereas the Provincial Highway Commission of the Province of Ontario have requested the Council of the County of York to present to the Commission the views of the County Council on road conditions and methods of improvement throughout Ontario.

Therefore be it resolved, that in the opinion of this committee of the Council of the County of York:—

(1) The Government should establish a system of Provincial roads, that such roads should be leading roads running out from the large centres of population and should be built and maintained entirely by the Province.

(2) And that an increased grant be given to the County Road Systems with the same proportion towards maintenance.

(3) And that roads leading through urban municipalities, united with counties for county purposes, be treated the same as other portions of the County System.

(4) And that an adequate tax be imposed on self-propelled vehicles, such tax graded according to weight and power.

(5) And that the revenue derived from such tax be apportioned among the municipalities according to the cost of maintenance of approved roads built by said municipalities.

(6) And that an increased tax be imposed upon all railways and this revenue be used for the purpose of building and maintaining good roads.

(7) And that the Dominion Government be petitioned to make a substantial grant annually for Good Roads purposes.

(15) RESOLUTION PRESENTED AT HAMILTON,

NOVEMBER 11TH, 1913, BY COUNTIES OF WENTWORTH, NORFOLK, BRANT, WELLAND, HALDIMAND AND LINCOLN.

(1) That we believe the Federal Government should assist by a substantial grant the building and maintenance of improved highways. That such grant should extend over a period of years to give continuity to any comprehensive scheme.

(2) That we believe any money received from the Federal Government by the Provincial Government should be spent by the Provincial Government for the building of through roads as Provincial Roads.

(3) That we approve of Government aid in not only building but maintaining roads in every County which adopts advanced methods of road building, to the extent of two-thirds of such cost. Counties to contribute one-third of such cost.

(4) That whereas there are now in our Province in active use about sixteen thousand automobiles, which machines are capable of going great distances in a comparatively short time and which is contributing very largely to wearing out of our Good Roads System, therefore be it resolved that this meeting petition the Ontario Government to place a substantial tax, according to horse power, on all automobiles, said tax to be applied on road building.

II. TOWNSHIP COUNCIL OF

(1) ARTHUR.

Moved by John W. Ghent,

Seconded by J. A. Douglas.

That in the opinion of this meeting any money that may be expended by the Provincial Government or any additional to the sum now spent by the County Council for the improvement of our highways would be spent to the best interests of the great majority of the people who require to use the roads for business purposes, by improving those roads leading to our nearest market centres, rather than by building a system of trunk or leading roads or connecting up the various county systems. Also we consider it in the best interests of the rural communities who largely built the roads and who alone require to use them for business purposes, that the control of the roads remain in the hands of the local municipalities: and we think a system of trunk or leading roads is only desired by those who wish to use them for pleasure, and in our opinion the cost of improving roads for pleasure should not be made a burden on the whole community, but should be borne by the parties who wish to use them for that purpose, viz., the owners of automobiles.
Carried unanimously.

(2) NELSON.

We, the undersigned members of the Municipal Council of the Township of Nelson wish to place ourselves upon record as being strongly in favor of an improved highway system, throughout the older portion of the Province of Ontario. We have had some experience in the building of macadam roadways in the County and already realize that the problem of roads is such a vast one that we feel that a road system such as would be beneficial to the older portion of the Province of Ontario cannot be brought about under the present system of road construction. While we have in the County of Halton only got well started in the way of road improvement, our taxes, however, have gone to a point where it would be detrimental to the interest of the community to place a higher assessment upon the land.

(1) We are of the opinion that the leading roads in the older portion of this Province should be made Provincial Highways, and that these highways should be constructed and maintained by the Provincial Government under the supervision of a Highways Commission.

(2) We are further of the opinion that the Provincial Government should select other roads that would be the most suitable for feeders to what would be the Provincial Highways, and let them be designated County Roads, and we believe that the Provincial Government should pay a good portion of the cost of both the Provincial and what would be known as County Highways.

(3) We believe that the Dominion Government should give a subsidy to the Provincial Government on all roads constructed and known as Provincial or County Roads.

(4) We believe that the property fronting upon improved highways should pay a reasonable frontage tax.

(5) We are further of the opinion that the cities, towns and villages that are connected up should pay a portion of the cost of these highways.

(6) We fully realize that it would be bad judgment on the part of the Government and the people to continue to construct improved roadways without making any preparation for the maintenance; and considering that the automobile has upset all road standards, and that a higher class and more expensive roadway is required from the advent of the automobile, we therefore strongly urge that a horse power tax be placed upon the automobile, and that that tax be used by the Government for the maintenance of Provincial and County Highways. We would still have what would be known as the Township Roads, and we feel that the upkeep of the Township Roads would be about all that could be taken care of by a municipality. In the past, the Government have given liberally to the construction of railways, canals, harbours, etc., and are expending millions of dollars at the present time along this line, and as we understand these expenditures are being made by the Government to lessen the cost of transportation, we believe that millions of dollars could be saved to the country each year in handling the produce from the farm to the railway and in the construction of through roads that would connect up all of the great consuming centres, and thereby enable the producer to haul his produce by motor truck, etc., a much greater distance. This would also be the means of bringing the producer and the consumer in direct touch with one another.

(7) We respectfully submit that a road between Toronto and Hamilton should be constructed at an early date, as we believe that this road would bring more producers and consumers together, than any other piece of road that could be constructed of a like distance.

(3) PUSLINCH.

We, the members of the Township Council of the Township of Puslinch, County of Wellington, do hereby represent to your Honourable body what we believe to be the mind of the ratepayers of the Township which we represent in the matter of Highway Improvement.

(1) That we believe the present system of roadbuilding and maintenance must be improved upon.

(2) That we most earnestly and seriously object to the building of so-called "Trunk Roads" through the Province.

(3) That the increased motor traffic being largely responsible for the depreciation of the leading highways, we therefore ask that a reasonably heavy and proportionate tax be imposed on all motor vehicles running through the municipalities.

(4) That the said tax, together with an increased Government grant, be proportionately applied to the building and maintaining the leading roads in the municipality.

(5) That greater provision be made by the Legislature to prevent drivers of motor vehicles running at excessive speed and for the punishment of offenders.

(6) That we emphatically disapprove of any action to take the control of any part of our highways out of the hands of our local municipalities.

(4) TORONTO.

Moved by L. H. Pallett,

Seconded by D. H. McCaugherty,

And resolved that this Council urge upon the Highway Commission the necessity of giving Township assistance rebuilding of roads in the different Townships, and instruct Clerk to forward copy of above resolution to the Highway Commission. *Carried.*

(5) WILLIAMSBURG.

Moved by J. H. Deeks,

Seconded by T. C. Merkley,

And resolved that whereas the Ontario Government has appointed a Commission to investigate the whole question of better roads, therefore the Municipal Council of the Township of Williamsburg would respectfully urge upon the Commission that the first roads to be improved should be the market roads in each local Municipality, and that any assistance granted should be expended by each local Municipality under the direction of the Government Engineer, also that the Government should abolish the present system of Statute Labour. The Clerk is hereby authorized to send a certified copy of this resolution to the chairman of the Commissions of Highways. *Carried unanimously.*

Moved by John M. Casselman,

Seconded by Robert Cunningham.

That this Council believes that the rate-payers of the Township of Williamsburg are not desirous of entering in the Good Roads System as it would have a tendency to increase the taxes which are somewhat burdensome at present, but would appreciate any grant made by the Government to the Township for the improvement of the roads and bridges therein. *Carried.*

(6) MUNICIPALITIES ON KINGSTON ROAD.

(TOWNSHIPS OF REACH AND DARLINGTON; TOWNS OF WHITBY, OSHAWA
AND PORT HOPE.)

Moved by Mr. Laidlaw,

Seconded by Reeve Sparks of Pickering.

That the Kingston Road be taken over by the Government, re-surfaced, grades cut down by fills or cuttings or by deviations where necessary.

That the Government maintain the road and supply the necessary machinery and overseers, and that towns, villages, and townships adjacent to the Kingston Road may have the use of the road equipment, and advice of the overseers at the request of the municipality.

That your Committee also recommend that provided the County take advantage of the Highway Improvement Act the Government increase their contribution for construction and maintenance of all leading market roads to 50 per cent.

That your Committee also recommend that the width of tires of heavy vehicles be increased to not less than four inches, and that the tax on automobiles be graded increasing with the amount of horse power; proceeds of such tax to be applied to road building and maintenance. And that the freight rates on crushed stone, gravel and road-building material be reduced.



Road Construction Camp in Lennox and Addington.



A Gravel Road in the County of Lennox and Addington.

III. TOWN OR VILLAGE COUNCIL OF

(1) BRONTE.

Moved by W. Sargent,

Seconded by J. W. Humerfelt.

That as the trustees of our Village of Bronte, we feel we are but expressing the unanimous desire of our people in representing to the Ontario Highway Commission the urgent necessity of the Government of Ontario constructing and maintaining certain through or leading highways. The large amount of through traffic passing over the Lake Shore Road between Toronto and Hamilton shows conclusively that local municipalities should not be expected to keep up roads to be largely used by non-residents. On behalf of our whole community we would like to urge upon your Commission and through you upon the Government the urgent and growing necessity for a permanent Government Highway along the Lake Shore Road between the two large cities of Toronto and Hamilton. Without doubt the great amount of travel, and the large number of people served, should lead the Government to select the Lake Road as the first permanent highway to be constructed in Ontario. This particular road stands out paramount as it is almost a continuous settlement of small farms and holdings from city to city and should serve to bring the producer and consumer much closer together with profit to both.

(2) BURLINGTON.

We are of the opinion:

(1) That Provincial Highways should be constructed connecting the different important centres of the Province.

(2) That County or Township roads should be constructed as feeders and connecting links from the smaller towns and farming districts to the Provincial Highways.

(3) That all Provincial Highways should be constructed under Government commission.

(4) That the larger portion of the cost should be borne by the Provincial and Dominion Governments, and that the balance should be paid by frontage tax on the property fronting on their permanent highways and by the cities, towns and villages through which these permanent highways run.

(5) That a horse-power tax should be placed on all automobiles and this revenue to be used by the Government for the maintenance of Provincial Highways.

(6) That the Lake Shore Road which connects the cities of Hamilton and Toronto and serves a population of over half a million people, and which at present is in a deplorable condition should be the first Provincial Highway constructed.

(7) That a copy of this resolution be sent to the Honourable Commission of Public Roads and Highways.

(3) MERRITTON AND PORT DALHOUSIE.

The Petition of the Municipal Councils of the villages of Merritton and Port Dalhousie in the County of Lincoln,

Humbly sheweth:

That your Petitioners wish to bring to your notice the following particulars in regard to what we consider an injustice that is being done them, and which has been acknowledged by members of the County Council, but just how to relieve these two Municipalities of this injustice they have been at a loss to know.

(1) Those two Municipalities have been paying—Port Dalhousie from 1862 and Merritton from 1874—towards the up-keep of the highway known as the Queenston and Grimsby Stone Road, extending from the westerly limit of the Township of North Grimsby to the Niagara River at Queenston, in the County of Lincoln, and no part of this road comes within a mile or more of either Merritton or Port Dalhousie, nor is it travelled over or used by our ratepayers.

(2) This year Merritton had to pay the sum of \$956.72 and for the last five years we have paid towards the upkeep of this road \$3,602.42. And Port Dalhousie this year paid \$719.36, and for the last five years we have had to pay \$2,711.44 which is a very heavy tax on two small villages such as we are, as well as keeping up their own streets. The former Municipality (Merritton) having a few years ago to take over and keep up about three miles of a toll road which was abandoned by the Company that controlled it.

And your petitioners would most respectfully pray that your Honourable Body in considering and working out your highway improvement system would take the position of those two Municipalities into consideration and if at all possible to relieve them of the burden of having to pay toward a road that does not run through either place, and from which our citizens receive no benefit whatever, and will enable us to expend this additional amount on the up-keep of the streets of our local Municipalities.

(4) OAKVILLE.

Moved by W. H. Carson,

Seconded by James P. McDermott.

Realizing the great need and importance of an improved highway system and further realizing how impossible it would be to bring about a system of highways under the present road system, and further, how impossible it would be to finance such a road system as this Province is sorely in need of;

This Council hereby declares that we are heartily in accord with the Ontario Government programme of expending \$10,000,000 upon an improved highway system. We believe that the Commission should map out the highways and select such as would serve the best interests of the older portion of this Province which should be designated Provincial Highways.

We further believe that all road construction should be carried on under the supervision of a Highways Commission and that the Provincial Highways should be constructed by the Government Commission, and the greater percentage of cost borne by the Provincial and Dominion Governments. County Roads should receive a reasonable percentage from the Government for construction and maintenance

system arranged for. For the maintenance of the Provincial Highways we strongly urge a horsepower tax to be placed upon the automobile, and that that tax be used by the Government for the maintenance of Provincial Highways.

In conclusion, we wish to call the attention of the Honourable Commission to the deplorable condition of what is known as the Lake Shore Road, between Toronto and Hamilton. We wish to state further that this is one of the most important roads in the Province of Ontario, a distance of about 35 miles, with the city of Toronto, 450,000 population, at one end, and the city of Hamilton, 100,000, at the other, with an intervening population of over 10,000, with land that is being used for fruit and truck gardening purposes, and where every foot of this land could be brought under intensive cultivation for fruit and truck gardening purposes. If a proper highway were constructed and connecting up Hamilton and Toronto, it would be the means of bringing together more producers and consumers than any other road of a like distance in the Province of Ontario. With good roads, fruit and vegetables will be handled at long distances by motor truck direct from the producer to the consumer. We strongly urge upon your Honourable Commission that when you have worked out a general improved highways scheme, that the Lake Shore Road between Toronto and Hamilton be one of the first roads to be constructed.

This Council hereby appoints a deputation consisting of the Mayor, the Reeve and the Deputy-Reeve to present this resolution to the Ontario Highways Commission at their Toronto sitting.

IV. THE CARADOC INDIAN RESERVE.

Moved by Chief John L. Case;

Seconded by W. F. Timothy.

That this Council respectfully request the Provincial Highway Commission to include in their report plans for the improvement of roads on Indian Reserve, especially where they form extensions of improved Highways.

(Sgd.) CHIEF L. CASE,
W. F. TIMOTHY,
GEO. E. DOLSON.

Moved by Chief Wilfrid Riley,

Seconded by Job Fisher.

That this Council respectfully request the Provincial Highways Commission to include in their Report plans for the improvement of roads on Indian Reserves, especially where they form extensions of improved highways.

(Sgd.) CHIEF WILFRID RILEY.
JOHNSON GROBLECH.
ELIJAH BURCH.
JOB FISHER.
GEO. FISHER, Sr.
RICHARD SIMON.

V. BOARD OF TRADE OF

(1) GUELPH.

Whereas a general movement in the Province and in the country at large is being manifested for the construction of highways adequate to modern traffic requirements,

And whereas the building and maintenance of such highways would facilitate communication and prove a great economic saving and social advantage to the Province,

And whereas it is advisable that all public bodies should concur in this movement,

And whereas the Province of Ontario has 50,000 miles of public roads of which less than 20 per cent. if permanently constructed would accommodate 80 per cent. of the traffic;

Be it therefore resolved:

That this body put itself on record as favouring highway betterment and the raising of the standards of road construction in general, and as urging the necessity of constructing leading highways, uniting county systems and the establishing of an organization for permanently maintaining the same under Government supervision.

(2) HAMILTON (WITH MANUFACTURERS' ASSOCIATION).

We, the members of the Hamilton Board of Trade and the Manufacturers' Association, having met in joint committee and realizing the great importance of better roads in our Province, beg to suggest the following for the consideration of your Commission:—

(1) We would suggest that our main leading roads **be made Provincial Highways** to be constructed and maintained by the Provincial Government under the supervision of a Highways Commission. The construction to be of a permanent nature, suitable for the present day traffic and for the traffic that is likely to follow the construction of these permanent roadways.

(2) For financing the construction of these Provincial Roadways, we believe that the property benefited by such roads should be assessed 25 per cent. of the cost, to be spread over a reasonable number of years. The cities, towns and villages that are connected with the Provincial Highways also to pay 25 per cent. of the cost, to be apportioned on the basis of population. The balance of 50 per cent. to be paid by the Provincial Government. We are, however, strongly of the opinion that the Dominion Government should assist by paying a portion of this 50 per cent.

(3) For maintenance, we believe that a reasonable tax should be placed upon automobiles, motor trucks, etc., and that the proceeds of this tax should be used by our Provincial Government for the maintenance of Provincial Roadways. The maintenance also to be under the supervision of the Government Highway Commission.

(4) We believe that there should be a most comprehensive system of feeders leading to Provincial Highways. We believe that the Highways Commission should assist the counties in the selection of roads best adapted for feeders. These roads should be known as County Roads and financed as at present, by the Government paying one-third of the cost.

(5) We are of opinion an organized movement embodying a road scheme sufficiently comprehensive to meet the requirements of the older portions of the Province could not be made effective at once.

(6) We therefore respectfully urge that some of the most important roads such as the Toronto-to-Hamilton permanent highway should be started immediately following the formulation of a general road scheme by the Government, thus allowing the Commission to gradually inaugurate a road construction and maintenance organization..

(3) OAKVILLE.

Moved by W. A. Buckle,

Seconded by Alfred Hillmer.

That the Oakville Board of Trade, which represents all the business interests of the town and district, beg to lay before the Ontario Highway Commission our Board's unanimous recommendation that the Provincial Government should assume and maintain certain main or through highways. The growing trade and commercial interests demand a class of highway on which traffic will not be interrupted no matter what the weather conditions may be. A period of bad roads means more and more interruption to business, and the manufacturer, merchant, labourer and the consumer are all detrimentally affected by the impossibility of the rapid transfer of goods. To ask local municipalities to provide such permanent highways, to be used largely for outside traffic, is placing an unfair burden on such municipalities. The case of the Lake Shore Road between the large cities of Toronto and Hamilton is a striking example, as over it could easily be conveyed by large motor trucks manufactured articles and all kinds of goods, as well as the fruit, vegetables and produce from the small farms along the line, not forgetting the growing importance of tourist traffic on this particular road which passes through a most attractive section of country. As our members feel your Government wish to serve the greatest number of people with any road, we beg to bear testimony to the fact that a permanent highway along the Lake Shore would prove of the greatest benefit to all the interests of our growing town as well as the community.

Our Board appoints a delegation composed of our President, W. A. Ferrah, W. C. Davis, Councillor C. W. Evans and R. B. Barclay, to lay the resolution before the Ontario Highway Commission at their Toronto sitting.

(4) ONTARIO ASSOCIATED BOARDS OF TRADE.

Resolved:

That every effort should continue to be made to carry on the campaign for good roads, more especially in the avenues of trade between the towns and cities and the source of supply, the country round about; and free and well-protected markets should be encouraged at all centres of trade.

That this Board heartily approves of the scheme outlined in the speech by the Lieutenant-Governor at the opening of the Ontario Legislature on February 4th in which the Government contemplates expending a large amount of money not only towards the cost of building, but also to the maintenance of the roads throughout the older sections of Ontario, and respectfully submits that the appointment of a competent Royal Commission to investigate and report upon conditions and requirements, and as to the best methods of administering and considering such works, would attain the most efficient and equitable results.

That we respectfully urge upon the Government of Ontario that they co-operate with the municipalities in and about provincial institutions in various portions of the Province in the construction of good roads in and about the said institutions, and use as far as possible the institution labour and materials thereon.

VI. MOTOR ASSOCIATIONS.

(1) HAMILTON AUTOMOBILE CLUB.

Resolved:

That we, the executive of the Hamilton Automobile Club, at a meeting held on November 10th, thoroughly understand and realize the importance of improved highways, and are willing to assist the Commission which has been appointed for this purpose in going so far as to say that we believe the Government and the cities, towns and villages that are connected up with a permanent highway and townships through which the highway passes, and that all properties fronting on and benefiting by it should share in the cost of construction and maintenance.

That the highways selected by the Provincial Government should be constructed and maintained by the Provincial Government under the supervision of the Commission, and that a reasonable tax should be placed on automobiles and all other vehicles according to a scale to be determined by the Commission.

(2) OTTAWA VALLEY MOTOR CAR ASSOCIATION.

Whereas every civilized nation is awakening to the inestimable commercial, industrial and social value of Good Roads, and is taking immediate steps toward such an end;

And Whereas the Dominion of Canada, federally, and the provinces, individually, are rapidly developing the matter of Good Roads as an integral part of their future policy;

And Whereas the city of Ottawa being the capital of Canada and a point of common interest to the whole Dominion is surrounded by roads which are a discredit to our status as a city and to the plane of civilization which we believe we occupy; that it is shut out from the outside world and particularly from the great country to the southward which has thousands of miles of the finest state roads leading right up to the border at Ogdensburg; that thousands of American tourists annually come to this limit and depart without paying our capital a visit, whereby we lose our share of the most profitable business, the tourist trade; that the sole and only difficulty in the way is some sixty miles of bad roads between Ottawa and Prescott;

Be it resolved:

That in the opinion of this Association the building of the Ottawa-Prescott Tourist Road is an immediate necessity, and should be immediately dealt with as an emergency inlet to Canada's capital, aside from any provincial road policy, and that the proposed route *via* the Experimental Farm, Manotick, North Gower, Beckett's Landing, Kemptville and Spencerville be approved.

VII. ONTARIO GOOD ROADS ASSOCIATION.

(1) That the roads of the Province should be classified as township, county and main highways, and the latter two be designated, constructed and maintained under the provisions of the Highway Improvement Act, and that specifications for the construction of each be varied accordingly and approved by the Public Works Department before work is commenced.

(2) That the Municipal Act should be amended to compel all municipalities to appoint a Road and Bridge Commissioner, and that the Highway Commission define the duties of said officer.

(3) That with a view to increasing the permanency of municipal councils, the Municipal Act should be amended to provide for the specific designation of each member for nomination and election purposes—as reeve, deputy reeve, first, second and third councillor, or as the case may be.

(4) That the use of wagons with wide tires be made compulsory on all highways.

(5) That provincial aid for the construction and maintenance of roads under the Highway Improvement Act should be at least fifty per cent. of the cost.

(6) That a tax should be levied on all motor vehicles and the Supplementary Revenue Act amended by increasing the taxation of railways to provide a fund for the maintenance of improved highways.

APPENDIX No. 3

Summary of Evidence Presented to the Commission.

The following is a brief summary of the features in evidence given before the Commission at its public meetings held in Ottawa, Belleville, Hamilton, London, Berlin, Guelph and Toronto, when representatives of municipalities and interested associations responded to the invitation to express their views on the road question.

(1) STATUTE LABOUR.

The Eastern Municipalities are in favour of the abolition of Statute Labour, so far as construction is concerned; it is useful, however, for maintenance purposes. The Central and Western municipalities are satisfied with commutation according to township. The present system can be made efficacious by means of proper supervision of pathmasters by township road commissioners. In cases where Statute Labour is commuted, care should be taken to ensure a sufficient road fund.

(2) TRUNK AND MARKET ROADS.

In localities where a trunk road would serve not only important tourist and through motor traffic for commercial purposes, but would form in a rich agricultural country a basis upon which a system of rural feeders could be established, the trunk road is considered favourably by the entire community. Trunk roads however, which have little local traffic, are so great a burden upon the ratepayers that any increased expenditure upon them should concern the Province alone. The construction of a trunk line or lines not necessarily interurban but extending throughout the Province, must not conflict with the present railway systems, but should, if possible, in agricultural country, feed the railways, and connect as many local centres as possible. At the present time the chief need of the Province is a system of local market roads, with specifications of sufficient high standard to bring marketing facilities throughout the Province to a uniform state of efficiency. To achieve this result with the greatest economy, local roads not serving market purposes should rest with the municipalities for maintenance.

(3) ROAD CONSTRUCTION.

For main-travelled country roads, the present method of construction is generally sufficient. For interurban highways beyond the three mile limit of cities, concrete or bituminous-bound macadam would be a proper material. For greatly travelled interurban roads and within the three mile limit, concrete foundations are recommended. Where gravel is in abundance this material may be used to make very satisfactory county roads. With regard to unsurfaced highways, emphasis should be laid on the need of proper drainage. For both County and

Township roads, Government specifications sufficiently elastic to admit of local deviations would be valuable; this should also entail Government inspection.

(4) MAINTENANCE.

The Province should contribute towards the maintenance of approved roads and should establish for the carrying out of the work efficient patrol systems. It should also encourage by financial and other assistance the use of the split-log drag on unsurfaced township roads. The Eastern municipalities are inclined to favour Government control of maintenance but those in the Western section of the Province desire as much as possible the local management of highways.

(5) AUTOMOBILES.

A tax should be placed upon automobiles and other motor vehicles according to horse power or weight without, however, penalizing this sort of traffic. Motorists are willing to pay a tax of approximately 40 cents per horse power. Other suggestions include a tax of:—

(a) 50c. up to 20 h.p.; 75c., 21 to 30 h.p.; \$1.00, 31 h.p. and over, on both automobiles and trucks.

(b) A tax of \$1.00 per h.p. (stated by motorists to be excessive).

(c) A tax averaging between \$25 and \$30.

The fund derived from this revenue should be devoted to road repair (including oiling of through highways) and might be expended by the Province on trunk roads only, or on being returned to the municipalities from which it is derived, might very well be spent locally.

(6) ORGANIZATION.

The central authority might be vested in the present Department of Public Works or in a separate Department of Highways or in a permanent Commission. Roads should fall into a threefold classification, according to traffic requirements, i.e., main, county and township roads. Each county might have a County Commission consisting of a permanent Chairman, the road Superintendent and a County Councillor. The position of cities and towns separated from the county for municipal purposes as contributors to a county scheme on the one hand, and that of smaller towns and villages as beneficiaries of a county scheme must be readjusted. In this way county roads would be better financed and the system carried through cities, towns and villages in any county without interruption. To this end, the Province should fix not only the proportion of the cost of construction and maintenance to be paid by the larger urban municipalities on the basis of a metropolitan area of approximately 20 miles radius outside cities of over 100,000 population, but also to assist as far as possible the smaller towns and villages. Operation under the Colonization Road Act in the Northern townships of Old Ontario should remain unchanged.

(7) GOVERNMENT ASSISTANCE.

A definite schedule of Government aid according to traffic requirements and material to be used should be fixed, with a percentage of aid in construction varying from 50 per cent. to 66 2-3 per cent., and a maintenance grant of a

proportionate amount. In return for this assistance, municipalities should comply with Government specifications and inspection. The suggestion is made that the Government should also endorse municipal highway bonds for permanent roads. Any scheme for Government aid should not be limited to the present County Road System but should be extended to municipalities on the basis of assessed values with a benefit to as many local units as possible. This method of Government aid might be brought into effect without deranging the present county road system, towards which grants of one-third of construction costs might be continued.

(8) ASSESSMENT.

If any further tax on benefited property is imposed, it should be made as light as possible, and be distributed over a road improvement strip with the rate decreasing according to distance from the road in question. In the case of inter-urban highways a local improvement plan would be equitable, provided that a large proportion of the cost rested upon the cities themselves. As regards the general question of assessment, the present Act could be made much more effective if some control were placed over the individual assessors, in order to secure uniformity of taxation; and some equalization of assessed values both on land and buildings is necessary, the present county equalization system not being satisfactory in every case.

(9) TENURE OF MUNICIPAL OFFICE.

A guarantee of efficient service on the part of township road officials can only be brought about by a reasonably long term of office; for municipal officials a term of two or three or even five years is advocated, or in the case of road commissioners, holding of office during satisfactory service.

(10) RAILWAYS.

A fund either for general or for highway purposes should accrue to the Province from a tax upon railways heavier than the existing general property tax, which is a greater burden on farm lands than on those of the railway corporations.

(11) WIDE TIRE LEGISLATION.

A minimum width of 4 inches should be made compulsory for all vehicles using improved highways. A gradual introduction of the long hind axle is suggested.

(12) BRIDGES.

The township should be relieved from bridge maintenance, which should devolve upon either the county or the province according to the width of span. Counties with heavy bridge expenditure require special grants.

(13) AID FOR PARTICULAR ROADS.

1. Government construction and maintenance is requested for a trunk road from Severn Bridge to North Bay through Muskoka and Parry Sound Districts.



A Reinforced Concrete Bridge with Concrete Railing. In Markham Township, County of York.



Concrete Road Construction at Sarnia, Ontario.

2. Government maintenance is asked for:

(a) Dundas Street.

(b) Kingston Road as part of the Toronto-Montreal route.

(c) The Queenston and Grimsby Stone Road, to be maintained as an International Highway.

(d) The Bay of Quinte, Trenton and Belleville Bridges on the Toronto-Montreal route.

3. Extraordinary grants are asked for:

(a) The Lake Shore Road (Hamilton-Toronto Permanent Highway). Immediate repair of this road is necessary.

(b) The Ottawa-Prescott Road.

(c) The Toronto-Montreal Highway in general, including the section from Kingston to Prescott.

(d) The Longwoods Road, Talbot Street and the London-St. Thomas Road.

(e) Roads from Ottawa to Prescott and L'Original.

4. Government assistance for the following market roads:

(a) Galt to Elmira, passing through Preston and Berlin; this should be one of the first market roads designated.

(b) From Tillsonburg to London.

APPENDIX No. 4

Road Mileage Tables

Total Mileage Returns	56,138.00
Total Revised Returns, 1913	54,349.25
Total (Office Map Measurement).....	58,383.00
Improved Stone Road	2,718.87
Improved Gravel Roads.....	18,465.41
Well Graded Earth Roads.....	19,871.71
Under County Roads Systems.....	3,688.62
Steam Railways	5,648.21
Electric Railways.....	321
Post Offices.....	3,007

ROAD MILEAGE TABLES

Township	Total Return (1907 Returns)	Total Revised Returns, 1913	Total (Office Map Measurement)	Improved Stone Roads	Improved Gravel Roads	Well Graded Earth Roads	Under County Road System	Railways (Steam)	Railways (Electric)	Rural Population per mile of Road (1907)	Number of Post Offices
Brant:											
Brantford	213	216	123	.....	27	.....	.....	53.	15.4	26.7	6
Burford	215	210	192	.....	150	50	.....	30.6	8.9	18.7	9
Dumfries S	108	117 $\frac{1}{2}$	136	10	40	60	.....	9.65	.....	23.1	6
Oakland	30	32	34	.....	.....	32	.....	6.5	.....	24.5	1
Onondaga	69	69	54	.....	.....	30	.....	9.65	.....	14.3	9
								109.40	24.3		
Bruce:											
Albemarle	125	130	163	.....	30	5	.....	.....	.....	9.3	7
Amabel	142	190	190	2	75	55	.....	9.6	.....	24.8	9
Arran	140	152	145	.....	130	15	.....	9.5	.....	14.7	4
Brant	207	200	200	.....	165	20	.....	19.6	.....	16.8	9
Bruce	169	184	175	.....	110	50	.....	2.5	.....	15.4	7
Carriack	325	220	184	.....	25	100	.....	11.6	.....	12.7	4
Culross	160	160	156	.....	10	.....	.....	3.3	.....	13.6	2
Eastnor	86	73	137	.....	20	30	.....	.....	.....	18.	5
Elderslie	140	160	199	.....	150	10	.....	12.5	.....	14.	4
Greenock	120	128	200	.....	100	.....	.....	1.25	.....	20.5	9
Huron	155	171	161	.....	77	65	.....	11.5	.....	19.1	9
Kincardine	170	.....	197	.....	.....	.....	.....	1.35	.....	14.4	9
Kinloss	141	141	128	.....	100	41	.....	11.4	.....	13.4	6
Lindsay	76	70	169	.....	25	20	.....	.....	.....	15.6	4
St. Edmonds .....	.....	.....	147	.....	.....	.....	.....	.....	.....	.....	2
Saugeen	105	100	116	.....	81	21	.....	13.1	.....	13.4	6
								107.20			
Carleton:											
Fitzroy	150	150	132	.....	10	5	26.25	12.	.....	14.9	6
Gloucester	255	255	204	57	30	60	34.4	17.25	.....	26.4	20
Goulburn	192	.....	176	.....	65	50	32.5	12.	.....	11.8	8
Gower N.	80	80	96	7	4	60	24.25	1.18	.....	23.1	8
Huntley	180	185	129	$\frac{1}{2}$	30	100	21.	7.12	.....	11.7	8
March	84	84	74	.....	15	50	10.7	3.95	.....	11.	5
Marlborough	168	92	118	.....	35	50	15.	.....	.....	7.9	4
Nepean	184	198	185	27	30	65	39.	31.6	.....	27.9	18
Osgoode	273	264	264	45	5	150	37.75	8.75	.....	15.1	14
Torbolton	78	62	52	.....	1 $\frac{3}{4}$	10	11.4	.....	.....	10.8	4
								93.85			
Dufferin:											
Amaranth	150	180	177	1	35	130	.....	20.	.....	14.8	6
Garafraxa E.	146	146	120	.....	16	.....	.....	4.75	.....	11.	5
Luther E.	84	84	91	2	30	52	.....	5.25	.....	19.2	6
Melancthon	168	240	214	5 $\frac{1}{2}$	120	115	.....	9.65	.....	19.	9
Mono	225	224	193	.....	100	100	.....	3.15	.....	12.	10
Mulmur	198	198	198	.....	40	60	.....	.....	.....	13.2	18
								42.80			
Dundas:											
Matilda	125	150	138	15	15	120	.....	7.5	.....	28.5	12
Mountain	100	100	127	18	50	32	.....	7.5	.....	28.2	8
Williamsburg	177	191	125	50	90	20	.....	7.5	.....	18.5	15
Winchester	168	166	117	20	80	10	.....	8.	.....	.....	7
								30.5			

Township	Total Returns (1907 Returns)	Total Revised Returns, 1913	Total (Office Map Measurement)	Improved Stone Roads	Improved Gravel Roads	Well Graded Earth Roads	Under County Road System	Railways (Steam)	Railways (Electric)	Rural Population per mile of Road (1907)	Number of Post Offices
Durham :											
Cartwright	96	96	103	.....	32	64	.....	10.8	.....	19.1	7
Cavan	189	189	148	.....	75	130	.....	23.5	.....	11.5	8
Clarke	280	280	270	.....	85	150	.....	18.45	.....	11.6	9
Darlington	204	.....	269	.....	175	140	.....	27.15	.....	17.8	12
Hope	189	199	248	.....	40	159	.....	33.6	.....	14.7	11
Manvers	207	175	236	.....	30	40	.....	15.5	.....	13.3	14
								129.00			
Elgin :											
Aldborough	225	230	230	.....	75	135	.....	22.4	.....	21.1	6
Bayham	165	127	127	.....	25	155	.....	18.	.....	19.5	8
Dorchester, S.	90	100	91	2½	35	60	.....	2.6	.....	17.1	2
Dunwich	204	182	182	.....	20	180	.....	20.	.....	13.7	6
Malahide	158	150	191	5	45	80	.....	15.8	.....	21.1	11
Southwold	216	216	230	.....	126	90	.....	41.2	6.	11.8	10
Yarmouth	180	200	231	.....	50	150	.....	22.2	9.6	22.9	1
								162.2	15.6		
Essex :											
Anderdon	69	69	76	1½	2	20	.....	7.5	5.5	27.7	4
Colchester, N.	88	87	122	.....	15	72	.....	16.5	1.	20.6	6
Colchester, S.	70	102	97	.....	15	.....	.....	7.1	.....	39.	3
Gosfield, N.	95	95	84	.....	58	37	.....	.....	6.4	20.2	2
Gosfield, S.	70	70	89	.....	40	30	.....	9.2	9.4	29.6	4
Maldstone	150	150	108	.....	50	10	.....	23.3	3.	18.6	5
Malden	65	.....	67	2	18	10	.....	.....	0.5	21.8	3
Mersea	120	150	165	.....	25	100	.....	19.7	3.	31.2	7
Rochester	86	93	108	.....	.....	.....	.....	18.1	.....	24.6	6
Sandwich, E.	54	64	64	2	22½	29	.....	20.5	10.5	50.1	5
Sandwich, S.	69	69	76	.....	53	16	.....	12.5	6.5	22.5	3
Sandwich, W.	100	100	81	2	40	.....	.....	7.5	12.5	22.7	7
Tilbury, N.	60	60	79	.....	.....	50	.....	19.3	.....	32.5	1
Tilbury, W.	52	56	66	.....	.....	56	.....	11.1	.....	33.9	3
Pele Island .....	.....	50	.....	10	35	35	.....	.....	.....	.....	.....
								172.3	58.3		
Frontenac :											
Barrie	50	40	36	.....	.....	20	.....	.....	.....	9.	3
Bedford	189	190	155	.....	.....	150	.....	1.15	.....	6.4	6
Clarendon and Miller ..	100	90	73	.....	.....	15	.....	.....	.....	8.6	4
Hinchinbrooke	90	90	101	2	6	15	.....	12.35	.....	14.4	9
Howe Island	25	23	23	3	.....	10	.....	.....	.....	10.5	2
Kennebec	90	90	77	.....	.....	30	.....	10.65	.....	12.	3
Kingston	200	200	145	13½	186½	.....	24.6	25.4	.....	13.3	13
Loughborough	150	110	108	.....	40	64	12.3	.....	.....	11.1	7
Olden	115	120	110	.....	40	35	.....	10.45	.....	9.3	3
Oso	100	100	57	.....	100	10	.....	19.3	.....	11.7	7
Palmerston	90	100	66	.....	15	20	.....	11.7	.....	9.2	7
Pittsburg	85	100	78	40	.....	60	.....	10.55	.....	24.4	13
Portland	250	126½	108	63	84	.....	.....	19.50	.....	7.5	7
Storrington	100	120	111	60	40	90	.....	.....	.....	17.2	6
Wolfe Island	90	90	97	2	4	10	.....	.....	.....	14.3	5
								121.05			
Glengarry :											
Charlottenburg	200	200	120	5	2	.....	.....	13.25	.....	24.7	15
Kenyon	231	231	133	.....	110	50	.....	14.15	.....	16.8	6
Lancaster	171	150	116	.....	5	.....	.....	12.75	.....	20.3	10
Lochiel	200	200	127	.....	50	150	.....	17.75	.....	21.4	11
								57.90			

Township	Total Return (1907 Returns)	Total Revised Returns 1913	Total (Office Map Measurement)	Improved Stone Roads	Improved Gravel Roads	Well Graded Earth Roads	Under County Road System	Railways (Steam)	Railways (Electric)	Rural Population per mile of Road (1907)	Number of Post Offices
Grenville:											
Augusta.....	222	200	191	110	20	70	26.00	9.87	.....	15.4	15
Edwardsburg	360	140	140	15	10	.....	25.50	22.00	.....	10.7	11
Gower, S.....	60	46	49	.....	20	20	.....	4.2	.....	12.2	3
Oxford-on-Rideau	177	178	164	15	60	102	21.25	18.96	.....	13.6	13
Wolford	130	130	99	13	40	40	13.00	2.76	.....	10.5	5
								57.79			
Grey :											
Artemesia	201	220	163	.....	26	150	.....	16.25	.....	15.	7
Bentlnck	225	225	220	.....	125	100	.....	19.35	.....	12.8	11
Collingwood.....	130	153	170	8	71½	73½	.....	12.25	.....	26.5	11
Derby	82	113	109	20	55	10	.....	.....	.....	22.	6
Egremont	150	176	196	.....	.....	120	.....	10.95	.....	18.3	10
Euphrasia	216	184	184	25	125	35	.....	.....	.....	12.5	10
Glenelg	150	149	200	3	26	120	.....	10.9	.....	15.5	1
Holland	204	.....	169	.....	140	.....	.....	17.1	.....	11.3	9
Keppel	187	200	213	15	40	50	.....	13.	.....	19.1	12
Normanby	240	240	177	.....	40	100	.....	10.75	.....	14.	8
Osprey	110	110	183	.....	75	25	.....	.....	.....	22.6	11
Proton	240	216	216	.....	125	125	.....	6.25	.....	15.3	1
St. Vincent	189	.....	171	.....	.....	.....	.....	4.15	.....	13.1	10
Sarawak	51	36	36	1	19	16	.....	3.75	.....	29.7	3
Sullivan	150	155	191	.....	140	15	.....	.....	.....	18.3	11
Sydenham	160	160	222	34	70	56	.....	10.5	.....	19.7	12
								135.20			
Haldimand :											
Canborough.....	63½	63	50	.....	.....	25	9.5	15.6	.....	13.3	2
Cayuga, N.....	96	96	96	1	.....	50	14.7	23.9	.....	15.5	4
Cayuga, S.....	39	43	49	.....	.....	20	6.00	.....	.....	17.6	3
Dunn	40	40	43	4	4	28	8.00	.....	.....	17.5	1
Moulton	100	100	78	5	.....	75	7.50	17.6	.....	17.8	6
Oneida	96	93	100	.....	.....	50	15.2	17.5	.....	13.2	6
Rainham	70	70	74	.....	.....	10	11.4	0.5	.....	23.3	5
Seneca	160	160	103	.....	.....	50	2.6	18.	.....	10.2	5
Sherbrooke	20	20	25	.....	12	7½	.....	.....	.....	16.2	1
Walpole	198	210	156	5	6	100	37.4	22.	.....	.....	10
								115.1			
Haliburton :											
Anson and Hindon	30	35	11	.....	5	25	.....	.....	.....	17.8	.....
Cardiff	76	25	81	.....	.....	10	.....	8.69	.....	7.8	3
Dysart	200	120	122	.....	40	80	.....	8.6	.....	4.8	3
Glamorgan	100	54	42	.....	2	10	.....	11.06	.....	5.	2
Lutterworth	60	60	52	.....	.....	.....	.....	.4	.....	6.6	2
Minden	108	110	85	.....	.....	70	.....	.....	.....	10.8	5
Monmouth	50	70	71	.....	11	5	.....	11.85	.....	11.3	5
Sherborne .....	.....	25	25	1½	6½	32	.....	.....	.....	.....	.....
Snowden	105	120	46	.....	.....	25	.....	23.70	.....	6.2	4
Stanhope	80	80	51	.....	.....	.....	.....	.....	.....	5.7	5
								64.30			
Halton :											
Esquesing	198	203	203	10	41	50	71.25	25.25	.....	18.3	13
Nassagaweya	133	124	120	10½	60	30	40.35	15.35	.....	16.	5
Nelson	138	142	137	20	12	90	24.2	15.15	7.	18.8	11
Trafalgar.....	198	198	161	13	.....	75	40.00	24.8	5.55	16.7	11
								80.55	12.55		

Township	Total Return (1907 Returns)	Total Revised Returns, 1913	Total (Office Map Measurement)	Improved Stone Roads	Improved Gravel Roads	Well Graded Earth Roads	Under County Road System	Railways (Steam)	Railways (Electric)	Rural Population per mile of Road (1907)	Number of Post Offices
Hastings:											
Bangor Wicklow & McCl	80	45	76	.....	.....	20	.....	10.66	.....	12	3
Carlow	50	50	54	.....	3	25	.....	.....	.....	13.6	5
Dungannon	100	103	69	.....	.....	15	.....	15.8	.....	7	6
Elzevir & Grimsthorpe.	72	73	53	.....	21	11	28.20	25.67	.....	18.1	3
Faraday	75	75	56	.....	.....	35	.....	3.16	.....	11.4	5
Hungeford	175	375	212	.....	72	115	81.15	26.8	.....	20.5	13
Huntinrdon	50	106	118	.....	41	65	40.5	21.3	.....	41.3	6
Limerick	50	50	64	1	5	20	.....	13.8	.....	90.8	3
Madoc	100	96	134	.....	42	25	52.31	25.67	.....	27.2	7
Marmora & Lake	75	112	109	15	30	25	24.00	21.3	.....	22.3	7
Mayo	48	50	56	.....	3	22	.....	1.18	.....	10.2	4
Monteagle & Herschel.	50	85	126	.....	.....	8	.....	19.75	.....	32.6	7
Rawdon	150	150	147	25	175	.....	41.2	27.65	.....	18.6	8
Sidney	200	200	185	.....	200	.....	66.00	19.75	.....	20.6	9
ThurLOW	120	130	130	34	75	21	55.80	20.54	.....	29.7	10
Tudor & Cashel	100	100	68	25	.....	75	.....	13.8	.....	7.8	6
Tyendinaga	200	200	216	.....	135	65	62.25	10.9	.....	16.3	12
Wollaston	50	69	74	.....	.....	60	.....	4.7	.....	16.3	3
								282.43			
Huron:											
Ashfield	189	189	153	.....	180	9	.....	.....	.....	14.3	11
Colborne	125	94	94	.....	70	17	.....	7.4	.....	12.3	7
Goderich	156	120	166	.....	95	25	.....	16.5	.....	13.1	5
Grey	200	168	241	.....	50	100	.....	8.75	.....	15.4	7
Hay	110	150	117	.....	110	.....	.....	7.25	.....	28.8	7
Howick	201	201	191	.....	150	100	.....	11.1	.....	17.6	8
Hullett	135	118	140	.....	75	12	.....	15.3	.....	17.7	4
McKillop	137	137	137	.....	12	50	.....	.....	.....	17.1	9
Morris	162	143	143	.....	75	40	.....	29.2	.....	13.8	2
Stanley	112	110	120	.....	75	25	.....	8.75	.....	16.4	3
Stephen	150	150	145	1	100	40	.....	6.2	.....	23.8	12
Tuckersmith	127	127	111	20	72	10	.....	10.7	.....	16.3	5
Turnberry	87	92	104	.....	76	16	.....	17.7	.....	21.1	4
Osborne	126	154	119	.....	131	3	.....	.....	.....	15.9	8
Wawanosh, E.	100	85	91	.....	70	15	.....	.....	.....	16.6	3
Wawanosh, W	100	.....	91	.....	60	11	.....	.....	.....	18.5	6
								138.85			
Kent:											
Camden	120	160	44	1	5	80	.....	7.8	.....	19.3	5
Chatham	240	268	185	.....	.....	250	.....	1.91	1.05	18.1	11
Dover	204	280	185	.....	.....	200	.....	.....	14.1	19.4	9
Harwich	300	250	249	.....	75	150	.....	45.7	15.37	16.2	12
Howard	138	137	154	.....	69	68	.....	16.5	.....	20.6	3
Orford	160	160	137	.....	120	140	.....	12	.....	15.6	7
Raleigh	210	220	211	.....	25	100	.....	38.85	6.38	19.6	12
Romney	57	66	73	.....	33	33	.....	9.15	.....	28.4	5
Tilbury, E.	180	180	137	.....	6	90	.....	24.85	.....	16.1	7
Zone	72	72	52	.....	10	20	.....	14.85	.....	15.7	2
								171.61	36.90		
Lambton:											
Bosanquet	210	209	185	.....	55	.....	.....	11.65	.....	11.6	7
Brooke	170	165	205	.....	70	80	.....	22.8	.....	17.7	8
Dawn	205	202	202	.....	.....	174	.....	1.4	.....	15.1	11
Enniskillen	246	218	218	.....	50	130	.....	25.8	.....	16	8

Township.	Total Return (1907 Returns)	Total Revised Returns, 1913	Total (Office Map Measurement)	Improved Stone Roads	Improved Gravel Roads	Well Graded Earth Roads	Under County Road System	Railways (Steam)	Railways (Electric)	Rural Population per mile of Road (1907)	Number of Post Offices
Lambton—Continued											
Euphemia	125	125	148	.....	2	.....	.....	5.	.....	14.6	5
Moore	200	200	188	.....	118	82	.....	23.75	.....	19.1	12
Plympton	208	208	208	.....	65	.....	.....	27.4	.....	15.	7
Sarnia	108	100	193	.....	60	90	.....	34.4	.....	17.9	4
Sombra	224	200	227	.....	25	100	.....	11.25	.....	16.2	12
Warwick	210	210	189	.....	170	40	.....	14.35	.....	13.1	5
								178.00			
Lanark:											
Bathurst	80	103	143	9	35	30	17.7	11.6	.....	24.2	9
Beckwith	60	73	127	14	.....	6	12.5	16.78	.....	24.8	3
Burgess, N.	20	75	64	6	.....	25	4.4	.....	.....	35.6	4
Dalhousie & Sher. N.	60	175	150	.....	50	50	6.25	.....	.....	28.5	7
Darling	40	50	51	.....	4	20	5.0	.....	.....	16.6	6
Drummond	80	100	128	20	2	5	22.2	.....	.....	21.7	10
Elmsley N.	60	63	63	14	1	48 $\frac{1}{2}$	6.	9.00	.....	13.9	4
Lanark	90	150	151	2 $\frac{1}{2}$	7 $\frac{1}{2}$	50	8.75	.....	.....	17.7	10
Lavant	35	45	47	.....	3	.....	7.5	13.8	.....	11.6	5
Montague	82	100	163	12	3	5	.....	19.3	.....	22.3	4
Pakenham	50	116	95	4	23	45	6.25	7.9	.....	33.5	3
Ramsay	75	110	182	30	20	70	21.25	11.8	.....	26.1	8
Sherbrooke, S.	45	65	65	2 $\frac{1}{2}$	1 $\frac{3}{4}$	10	3.25	7.9	.....	15.8	3
								96.40			
Leeds:											
Bastard and Burgess..	205	126	126	15	10	97	18.0	7.8	.....	11.5	10
Crosby, N.	132	132	84	5	35	92	8.5	5.5	.....	7.4	5
Crosby, S.	111	80	80	6	8	53	9.8	4.	.....	13.	5
Elizabethtown	225	208	208	45	10	137	28.	37.9	.....	16.1	15
Elmsley, S.	66	66	47	16	.....	10	8.	2.35	.....	10.4	1
Escott Front	125	125	51	10	10	20	.....	4.74	.....	6.7	8
Kitley	100	139	139	25	5	111	15.	4.54	.....	16.6	5
Leeds and Lansdowne	100	100	259 $\frac{1}{2}$	50	25	25	.....	.....	.....	47.2	6
Yonge Front	165	55	82	20	.....	.....	8.90	6.91	.....	7.4	4
Yonge and Escott Rear	50	50	60	30	.....	10	8.50	1.11	.....	7.	16
								80.85			
Lennox and Addington :											
Adolphustown	20	43	43	.....	23	.....	14.75	.....	.....	26.1	5
Amherst Island	35	28	47	.....	18	28	.....	.....	.....	21.2	2
Camden, E.	255	255	110	200	40	55	48.	15.25	.....	14.6	15
Denbigh Abinger and A.	175	180	78	.....	.....	150	.....	.....	.....	4.6	4
Ernesttown	60	100	153	.....	70	30	28.00	11.25	.....	44.1	10
Fredericksburg, N.	70	70	76	.....	10	60	24.6	5.5	.....	19.3	14
Fredericksburg, S.	45	45	34	15	.....	.....	11.25	.....	.....	21.	.....
Kaladar Anglesea & E	100	125	6	.....	.....	10	.....	10.75	.....	10.4	5
Richmond	150	135	136	.....	60	20	32.5	16.65	.....	14.5	8
Sheffield	185	120	135	25	50	30	16.5	1.35	.....	10.7	4
								60.75			
Lincoln:											
Caistor	84	86	116	.....	.....	40	.....	.....	.....	17.2	7
Clinton	75	82	138	11	.....	60	6.5	6.25	3.25	23.7	4
Gainsborough	148	150	140	.....	.....	25	.....	8.75	.....	13.6	8
Grantham	54	94	116	10	6	78	4.00	10.9	9.	36.9	6
Grimsby, N.	60	72	69	14	4	55	6.5	8.25	6.8	23.3	7
Grimsby, S.	60	70	91	4 $\frac{1}{2}$	.....	30	.....	7.	.....	21.2	.....
Louth	90	147	147	12	4	.....	6.6	6.4	1.25	19.	4
Niagara	120	121	131	22	.....	50	5.4	10.	2.	13.5	4
								57.55	22.30		

Township.	Total Return (1907 Returns)	Total Revised Returns, 1913	Total (Office Map Measurement)	Improved Stone Roads	Improved Gravel Roads	Well Graded Earth Roads	Under County Road System	Railways (Steam)	Railways (Electric)	Rural Population per mile of Road (1907)	Number of Post Offices
Middlesex:											
Adelaide.....	150	150	108	8	92	50	16.2	8.5	.....	12.	8
Biddulph.....	110	100	118	.....	50	75	10.00	9.4	.....	17.8	5
Caradoc.....	175	187	217	5	50	114	14.3	32.8	.....	17.9	8
Delaware.....	69	90	79	.....	55	35	8.4	3.6	.....	18.6	5
Dorchester, N.	150	150	88	.....	20	100	13.5	17.1	.....	22.1	7
Ekfrid.....	170	142	160	2	60	80	12.5	38.	.....	14.1	11
Lobo.....	223	180	158	16	164	.....	18.6	12.9	.....	10.9	6
London.....	297	346	325	.....	328	18	36.6	44.7	.....	27.1	23
McGillivray.....	144	147	165	3	100	20	19.00	14.4	.....	17.4	10
Metcalfe.....	108	108	97	2½	55	50	7.00	4.	.....	12.6	4
Mosa.....	165	165	148	2	50	50	11.00	24.4	.....	11.5	5
Nissouri, W.	114	114	152	.....	85	25	16.1	19.	.....	22.	9
Westminster.....	140	192	192	1½	160	25	24.50	9.2	11.7	32.9	14
Williams, E.	144	122	102	.....	113	6	9.50	6.2	.....	8.5	4
Williams, W.	105	105	95	.....	68	37	11.00	7.8	.....	11.8	3
								252.0	11.7		
Norfolk:											
Charlotteville.....	174	174	202	.....	25	75	.....	14.4	.....	17.2	9
Houghton.....	99	100	119	.....	3	.....	.....	.....	.....	19.2	10
Middleton.....	111	120	166	.....	25	.....	.....	17.8	.....	20.7	6
Townsend.....	230	186	190	.....	.....	100	.....	24.5	.....	14.9	13
Walsingham N.	95	115	98	.....	40	25	.....	.....	.....	18.7	11
Walsingham, S.	78	103	118	.....	.....	.....	.....	3.5	.....	20.8	.....
Windham.....	300	300	204	.....	.....	.....	.....	29.5	.....	10.8	10
Woodhouse.....	150	135	105	20	60	30	.....	12.9½	.....	13.6	5
								102.6			
Northumberland:											
Alnwick.....	100	100	61	.....	50	30	.....	.....	.....	8.8	2
Brighton.....	150	149	222	.....	22½	125½	.....	11.6	.....	15.5	5
Cramahe.....	150	210	181	.....	50	170	.....	12.9	.....	14.	6
Haldimand.....	263	263	276	.....	100	100	.....	17.7	.....	13.2	14
Hamilton.....	183	200	235	.....	50	100	.....	18.4	(8.4)	19.1	14
Monaghan, S.	45	49	43	.....	35	14	.....	.....	discon.	19.5	4
Murray.....	240	200	206	.....	20	100	.....	21.75	.....	10.4	5
Percy.....	150	150	157	2	50	50	.....	7.2	.....	18.4	6
Seymour.....	198	200	168	20	90	15	.....	10.5	.....	14.1	11
								100.05			
Ontario:											
Brock.....	181	181	211	.....	151	30	.....	24.5	.....	18.7	10
Mara.....	140	140	164	46	45	20	.....	55.8	.....	19.8	6
Pickering.....	275	329	329	7	100	50	.....	33.4	.....	17.	17
Rama.....	110	110	65	.....	7	10	.....	16.	.....	9.7	9
Reach.....	130	170	207	.....	60	40	.....	21.2	.....	24.2	11
Scott.....	120	130	109	.....	75	45	.....	3.8	.....	15.6	3
Scugog.....	28	29	33	.....	18	11	.....	.....	.....	16.5	1
Thorah.....	102	102	108	.....	40	20	.....	22.4	.....	11.8	2
Uxbridge.....	170	160	156	.....	80	50	.....	12.4	.....	14.2	5
Whitby, E.	121	121	148	.....	60	40	.....	15.	.....	22.	8
Whitby.....	130	116	155	.....	47	74	.....	29.	.....	13.4	5
								233.5			
Oxford:											
Blandford.....	87	72½	78	15	35	22½	14.1	14.3	.....	16.8	3
Blenheim.....	175	179½	165	.....	179½	.....	36.3	29.5	.....	23.8	9
Dereham.....	156	154	171	23	65	10	34.3	26.8	.....	22.4	10
Nissouri, E.	135	140	139	18	70	30	26.5	12.2	.....	18.2	8

Township	Total Return (1907 Returns)	Total Revised Returns, 1913	Total (Office Map Measurement)	Improved Stone Roads	Improved Gravel Roads	Well Graded Earth Roads	Under County Road System	Railways (Steam)	Railways (Electric)	Rural Population per mile of Road (1907)	Number of Post Offices
Oxford—Continued											
Norwich, N.	99	74	97	9	.....	20	21.00	12.3	.....	20.6	6
Norwich, S.	100	100	104	3	5	.....	14.5	21.5	.....	19.3	5
Oxford, E.	97	97	105	8	20	.....	17.62	15.3	.....	20.	6
Oxford, N.	63	63	71	.....	6	.....	9.00	18.8	.....	18.3	2
Oxford, W.	75	100	93	14	50	50	13.6	15.4	.....	25.7	4
Zorra.	155	163	163	21	.....	.....	35.50	18.	.....	24.4	7
Zorra, W.	165	162	163	27 $\frac{1}{4}$	133	1 $\frac{3}{4}$	30.45	17.4	.....	15.1	8
								201.5			
Peel:											
Albion.	168	165	175	3	6	25	15.62	27.6	.....	13.2	13
Caledon.	200	203	193	3	50	100	21.25	37.6	.....	18.2	12
Chinguacousy.	240	235	241	17	10	200	33.12	29.4	.....	14.6	15
Toronto.	260	185	203	23	10	125	31.25	28.1	2.75	18.7	17
Toronto Gore.	68	63	60	4	3	40	8.12	1.5	.....	12.3	6
								124.2	2.75		
Perth:											
Blanshard.	133	117	117	20	160	10	20.00	15.2	.....	17.	8
Downie.	124	124	112	17	107	.....	19.25	15.	.....	19.7	4
Easthope, N.	115	95	114	.....	80	10	8.75	1.25	.....	17.5	7
Easthope, S.	70	70	67	2	50	18	9.68	24.4	.....	26.8	2
Ellice.	135	135	139	.....	85	50	18.26	8.5	.....	22.9	6
Elma.	160	150	164	.....	75	75	18.93	15.	.....	21.4	8
Fullarton.	120	87	99	2	83	2	15.62	7.25	.....	16.5	6
Hibbert.	89	89	100	.....	38	20	10.12	7.2	.....	22.9	5
Logan.	138	121	132	5	80	31	19.97	.....	.....	19.4	5
Mornington.	150	116	115	.....	90	16	22.50	9.	.....	19.2	10
Wallace.	148	148	121	.....	125	23	17.49	11.5	.....	17.	4
								114.30			
Peterborough:											
Asphodel.	111	.....	98	.....	20	35	.....	16.59	.....	14.7	4
Belmont and Methuen.	200	200	170	10	25	8	.....	9.87	.....	8.6	6
Burleigh Anstruther.	100	100	76	12	25	63	.....	.....	.....	5.8	4
Chandos.	90	.....	80	.....	90	.....	.....	.....	.....	.....	5
Douro.	221	121	97	.....	50	50	.....	7.90	.....	7.2	4
Dummer.	156	.....	102	.....	3 $\frac{3}{8}$	1 $\frac{1}{8}$	.....	.79	.....	10.4	7
Ennismore.	100	105	30	.....	60	25	.....	.....	.....	7.7	1
Galway and Cavendish.	120	120	82	.....	.....	120	.....	.....	.....	8.1	6
Harvey.	94	106	76	.....	10	.....	.....	.....	.....	9.8	3
Monaghan, N.	40	61	43	.....	10	30	.....	15.80	.....	24.5	4
Otonabee.	200	200	165	20	140	40	.....	23.70	.....	14.3	12
Smith.	150	200	145	50	100	30	80.57	5.92	.....	17.3	7
								80.57			
Prescott:											
Alfred.	100	100	100	.....	.....	.....	.....	14.1	.....	32.3	7
Caledonia.	132	120	120	.....	.....	.....	.....	6.2	.....	11.4	9
Hawkesbury, E.	115	115	115	3	10	80	.....	18.	.....	36.1	7
Hawkesbury, W.	75	75	75	4	25	25	.....	9.6	.....	17.9	5
Longueuil.	30	31 $\frac{1}{4}$	33 $\frac{1}{2}$	4	4	1	.....	6.6	.....	33.8	3
Plantagenet, N.	100	100	100	.....	.....	20	.....	19.7	.....	36.2	11
Plantagenet, S.	150	.....	127 $\frac{1}{2}$	.....	.....	.....	.....	.....	.....	20.9	9
								74.2			

Township	Total Return (1907 Returns)	Total Revised Returns, 1913	Total (Office Map Measurement)	Improved Stone Roads	Improved Gravel Roads	Well Graded Earth Roads	Under County Road System	Railways (Steam)	Railways (Electric)	Rural Population per mile of Road (1907)	Number of Post Offices
Prince Edward:											
Ameliasburg.....	100	100	90	10	90	.....	26.4	5.9	.....	24.9	7
Athol	69	65	59	4	.....	.....	12.00	.....	.....	15.3	5
Hallowell	129	.....	115	.....	.....	.....	29.00	9.87	.....	18.2	5
Hillier	130	97	80	5	87	6	20.5	7.9	.....	10.2	5
Marysburg, N	69	69	62	8	3	20	13.00	.....	.....	14.1	12
Marysburg, S.....	69	69	61	3	40	7	16.00	.....	.....	15.4	.....
Sophiasburg	129	93 $\frac{1}{4}$	107	14	55 $\frac{1}{2}$	23 $\frac{3}{4}$	28.60	.....	.....	12.7	9
								23.67			
Renfrew:											
Admaston	80	132 $\frac{3}{4}$	116	.....	.....	30	.....	26.46	.....	24.2	11
Algona, S	60	55	44	.....	.....	5	.....	10.66	.....	12.9	6
Alice and Fraser.....	120	240	110	.....	5	100	.....	7.9	.....	17.0	6
Bagot and Blythfield ..	150	150	82	.....	.....	100	.....	13.22	.....	8.4	6
Bromley.....	100	100	105	.....	4	90	.....	5.13	.....	19.7	7
Brougham	54	50	32	.....	.....	40	.....	.....	.....	9.8	2
Brudenell and Lyndoch	80	90	86	.....	.....	20	.....	.....	.....	15.3	6
Grattan	160	85	84	2	.....	5	.....	20.73	.....	11.7	8
Griffith & Matawatchan	120	51	51	.....	.....	10	.....	.....	.....	4.7	5
Hagarty and Richards.	180	145	49	.....	.....	.....	.....	9.8	.....	15.9	6
Head, Clara and Maria.	50	39	.....	20	15	.....	.....	.....	.....	5.9	.....
Horton	111	111	67	.....	20	70	.....	17.77	.....	12.6	4
McNab	150	150	101	2	10	75	.....	23.70	.....	22.7	11
Pembroke	24	35	21	$\frac{1}{2}$	8	5	.....	10.2	.....	35.3	2
Petawawa and McKay.	50	58	88	.....	5	5	.....	11.16	.....	16.9	1
Radcliffe	60	60	49	.....	.....	.....	.....	.....	.....	19.4	2
Raglan .....	.....	56	52	.....	.....	56	.....	.....	.....	.....	8
Rolph, Buchanan, Wylie	100	85	52	.....	.....	40	.....	5.9	.....	10.8	5
Ross	150	90	96	.....	25	50	.....	9.87	.....	12.3	5
Sebastopol.....	55	55	46	.....	.....	20	.....	.....	.....	11.3	6
Sherwood, Jones & Burns	.....	.....	46	.....	.....	.....	.....	.....	.....	.....	5
Stafford	60	60	52	.....	10	10	.....	4.74	.....	16.1	3
Westmeath	200	142	142	.....	31	50	.....	10.27	.....	15.4	5
Wilberforce.....	180	95	111	.....	.....	.....	.....	5.9	.....	11.9	6
								193.41			
Russell:											
Cambridge.....	100	.....	69 $\frac{1}{2}$	3	10	130	14.8	.....	.....	32.3	8
Clarence.....	100	225	225	.....	16	100	31.7	.....	.....	52.9	13
Cumberland	150	150	150	3	.....	50	29.2	.....	.....	23.4	9
Russell	150	.....	64	20	2	20	14.2	.....	.....	20.9	9
								89.9			
Simcoe:											
Adjala	138	134	134	.....	17	25	20.00	.....	.....	14.7	11
Essa	207	207	190	.....	75	100	32.5	19.	.....	15.4	9
Flos.....	200	200	186	5	25	125	29.00	10.00	.....	15.2	12
Gwillimbury, W	110	120	131	5	15	75	13.2	7.75	.....	19.6	6
Innisfil	176	196	197	.....	110	50	26.00	26.	.....	18.	14
Matchedash.....	51	40	114	36	18	18	3.2	14.	.....	8.8	3
Medonte	185	205	201	.....	50	75	30.5	24.5	.....	22.1	13
Nottawasaga.....	225	225	247	5	150	50	44.00	33.	.....	20.7	15
Orillia	202	207	256	10	112	55	32.75	38.9	.....	18.7	11
Oro	200	200	215	.....	70	130	38.25	14.	.....	18.1	11
Sunnidale	165	160	159	.....	40	100	25.26	9.	.....	13.5	7
Tay	110	110	158	$\frac{1}{2}$	20	65 $\frac{1}{2}$	26.05	28.3	.....	49.8	9
Tecumseth.....	210	210	200	60	75	70	37.00	32.75	.....	14.8	10

Township	Total Return (1907 Returns)	Total Revised Returns 1913	Total (Office Map Measurement)	Improved Stone Roads	Improved Gravel Roads	Well Graded Earth Roads	Under County Road System	Railways (Steam)	Railways (Electric)	Rural Population per mile of Road (1907)	Number of Post Offices
Simcoe.—Continued.											
Tiny	234	233	233	2	60	78	19.2	11.5	.....	16.6	9
Tossorontio	132	80	124	.....	20	30	12.5	13.6	.....	11.7	4
Vespra	186	186	196	.....	40	60	24.5	26.8	.....	13.5	5
								304.10			
Stormont:											
Cornwall	145	160	126	35	40	20	.....	21.	.....	37.9	12
Finch	130	130	108	.....	75	10	.....	15.25	.....	22.3	8
Osnabruk	185	187	129	1½	100	50	.....	10.75	.....	25.	11
Roxborough	200	200	117	.....	150	50	.....	14.75	.....	21.4	8
								61.75			
Victoria:											
Bexley	60	60	59	.....	35	25	.....	8.00	.....	12.9	4
Carden	90	90	92	2	43	22	.....	.....	.....	6.8	4
Dalton	50	50	68	.....	25	15	.....	.....	.....	9.1	4
Eldon	200	154	171	40	50	40	.....	33.57	.....	10.8	8
Emily	160	180	169	.....	100	80	.....	13.82	.....	11.9	4
Fenelon	150	150	163	3	20	10	.....	15.00	.....	13.8	11
Laxton	60	75	45	5	15	45	.....	.....	.....	11.	2
Mariposa	225	225	215	12	200	13	.....	21.33	.....	15.4	8
Ops	180	170	142	20	80	45	.....	53.32	.....	11.	4
Somerville	150	86	89	.....	25	50	.....	15.80	.....	11.7	5
Verulam	200	175	146	35	45	55	.....	11.45	.....	9.1	3
								172.29			
Waterloo:											
Dumfries, N	120	120	149	2	40	40	48.00	24.55	6.4	15.8	4
Waterloo	300	250	202	.....	175	75	60.75	33.9	16.3	21.9	15
Wellesley	198	159	159	.....	3	100	37.87	13.7	.....	22.2	8
Wilmot	200	175	175	.....	91	75	27.00	9.25	.....	23.	9
Woolwich	150	150	142	.....	150	.....	36.7	16.2	.....	27.1	7
								97.60	22.7		
Welland :											
Bertie	189	189	191	25	12	.....	23.5	43.75	.....	15.9	11
Crowland	57	140	120	2	.....	175	13.00	20.	1.	18.1	2
Humberstone	90	140	142	15	5	90	17.00	27.8	.....	31.6	8
Pelham	151	151	151	4	5	50	21.7	10.	.....	16.4	9
Stamford	100	90	106	12	.....	35	20.00	14.	18.75	25.2	7
Thorold	66	66	129	6	.....	60	19.2	11.	14.	24.3	5
Wainfleet	153	153	241	.....	.....	.....	27.5	33.75	.....	16.	7
Willoughby	100	103	103	13	.....	20	11.00	6.75	.....	8.7	2
								187.05	33.75		
Wellington:											
Arthur	147	147	157	½	85	62	12.2	18.1	.....	17.8	10
Eramosa	130	150	125	1	140	9	6.08	6.55	.....	18.8	7
Erin	200	200	201	1½	100	.....	11.52	10.	.....	15.3	7
Garafraxa, W	141	141	19	3	20	60	7.3	6.9	.....	14.4	6
Guelph	110	110	119	13	50	47	4.8	30.	.....	20.6	6
Luther, W	100	100	108	2	40	30	9.7	6.9	.....	18.2	9
Maryborough	168	207	148	¾	180	27	12.00	7.6	.....	15.7	7
Minto	192	194	174	.....	120	.....	9.6	39.	.....	14.1	9
Nichol	90	90	89	.....	30	60	11.8	12.5	.....	17.3	5

Township	Total Return (1907 Returns)	Total Revised Returns 1913	Total Office Map Measurement)	Improved Stone Roads	Improved Gravel Roads	Well Graded Earth Roads	Under County Road System	Railways (Steam)	Railways (Electric)	Rural Population per mile of Road (1907)	Number of Post Offices
Wellington.—Continued.											
Peel.....	165	165	195	.....	22	100	10.4	8.5	.....	19.8	11
Piklington.....	90	69	92	.....	1	50	3.88	10.	.....	12.9	2
Puslinch.....	200	200	168	4½	100	50	8.4	17.25	.....	13.2	5
								173.30			
Wentworth:											
Ancaster.....	125	125	134	6	.....	100	24.95	17.20	11.40	28.5	9
Barton.....	39	108½	82	18½	.....	90½	15.45	34.45	4.7	12.1	6
Beverly.....	190	180	185	35	50	40	26.5	12.16	.....	19.8	10
Binbrook.....	70	70	77	8	.....	40	8.7	.....	.....	17.1	4
Flamboro, E.....	56	85	117	22	30	23	16.5	3.95	.....	37.6	5
Flamboro, W.....	90	83	79	20	.....	50	28.00	2.76	.....	27.9	9
Glanford.....	69	92	78	7	.....	92	7.2	6.3	.....	21.7	4
Saltfleet.....	84	84	124	20	16	30	11.2	41.47	.....	38.	9
								118.24			
York:											
Etobicoke.....	84	76	110	8	9	60	16.88	12.	4.6	56.7	10
Georgina.....	80	80	93	.....	50	20	.....	10.5	.....	19.4	8
Gwillimbury, E.....	130	130	158	3	100	20	.....	14.15	8.75	24.7	8
Gwillimbury, N.....	90	87	87	.....	69	18	.....	5.75	11.6	17.	7
King.....	211	220	216	.....	75	110	.....	17.65	3.25	22.1	18
Markham.....	201	201	175	10	50	100	21.55	24.6	4.1	24.7	19
Scarborough.....	126	126	202	9	20	160	19.33	38.5	7.5	28.7	14
Vaughan.....	201	175	185	4	71	75	19.2	17.3	4.1	19.6	17
Whitchurch.....	158	158	146	10	70	30	2.15	36.	5.5	17.6	14
York.....	155	164	150	25	35	100	24.38	70.2	6.25	100.6	26
								246.65	55.65		

APPENDIX No. 5

Traffic Census Tables

The following tables contain what may be called a minimum traffic census for various representative roads throughout the Province. The count was taken practically between the dates of October 15th and November 15th, 1913, and as this is just the period between the close of the motoring season and the opening of market hauling on the part of the farmers, it will be seen that at its least the traffic will always be as heavy as the figures here given indicate. As one traffic officer put it, "The farmers are all busy ploughing and traffic is lighter now than at almost any time of the year." These figures therefore may be taken as indicating a point below which the volume of traffic on the roads shown, will not fall. This volume of traffic at the minimum will continue on the roads for every week in the year.

In all twenty (20) stations were established by the Commission and the counts taken for the full week of seven days from the hours of 7 a.m. to 7 p.m. In a number of cases it was found practicable to have the men stationed at the intersection of a main road and a local or side road and in these instances a count was made of the traffic on each of the two roads. The traffic returns on these local roads are also presented here.

STATIONS.

Station No.	1.—Barrie-Orillia Road.
"	2.—Lincoln County Stone Road.
"	3.—Guelph-Fergus Road.
"	4.—Yonge Street.
"	5.—Dundas Street.
"	6.—Kingston Road.
"	7.—Port Hope Gravel Road.
"	8.—Innisville Road.
"	9.—Metcalf Road (South of Ottawa).
"	10.—River Road (St. Lawrence).
"	11.—Athens Road.
"	12.—Kingston Road (East of Brockville).
"	13.—Kingston Road (East of Belleville).
"	14.—Madoc Road.
"	15.—Hamilton-Brantford Road.
"	16.—Sydenham Road (near Dundalk).
"	17.—Owen Sound Road (near Durham).
"	18.—Huron Road (between Stratford and Sebringville).
"	19.—Longwoods Road (near Glencoe).
"	20.—Talbot Street (between Aylmer and St. Thomas).

INTERURBAN MARKET ROADS

Class of Traffic	Weather—Day								Total	Daily Average
	Monday— Cloudy	Light snow	Tuesday— Cold	Wednesday— Cold	Thursday— Cloudy to fine and warm	Friday— Fine	Saturday— Fine and mild	Sunday— Fine and mild		
One horse light vehicle.....	42		19	45	27	43	147	45	368	52.5
One horse heavy vehicle	1			9	8	3	4		25	3.5
Two horse light vehicle.....	9		2	1	4		2	6	24	3.4
Two horse heavy vehicle	22		23	33	27	18	78		201	28.7
Runabout					1	1			2	.2
Touring Car	1			1	1	1		8	16	2.2
Motor Trucks.....										
Total.....	75		44	89	68	66	235	59		

Station: No. 1.

Road: Barrie-Orillia (Penetang) Road.

Location: Four miles north of Barrie on Penetang Road.

Condition of Road: Surface rough in places, but solid.

Class of Traffic	Weather—Day								Daily Average
	Monday— Cloudy	Tuesday— Rain	Wednesday— Cloudy	Thursday— Rain	Friday— Cold and clearing	Saturday— Cold and fine	Sunday— Rain	Total	
One horse light vehicle.....	76	61	86	70	79	91	110	573	81.8
One horse heavy vehicle.....	36	39	45	47	40	55	10	272	38.8
Two horse light vehicle.....	13	5	12	12	10	10	18	80	11.4
Two horse heavy vehicle	64	64	69	78	79	74	.....	428	61.1
Runabout	14	4	9	10	2	11	23	73	10.4
Touring Car	54	11	53	52	37	58	57	322	46.0
Motor Trucks.....	.....	.....	.....	.....	.....	.....	1	1	.1
Total.....	257	184	274	269	247	299	219	.....	.....

Station: No. 2.

Road: Lincoln County Stone Road.

Location: Three-quarters of a mile west of Beamsville.

Condition of Road: Sound, with surface muddy.

Class of Traffic	Weather—Day								Total	Daily Average
	Monday— Cloudy and cold	Tuesday— Cloudy and fair	Wednesday— Fine	Thursday— Fine	Friday— Fine	Saturday— Fair, cold and windy	Sunday— Fair			
One horse light vehicle.....	34	23	13	53	25	47	62	257	36.5	
One horse heavy vehicle.....	12	8	20	14	11	14	1	80	11.4	
Two horse light vehicle.....	9	1	.....	6	2	9	1	28	4.0
Two horse heavy vehicle.....	50	68	49	57	59	57	1	341	48.7	
Runabout.....	3	6	14	7	12	18	52	112	16.0	
Touring Car.....	39	43	62	103	59	73	325	704	100.5	
Motor Trucks.....	14	6	13	6	9	5	3	56	8.0	
Total.....	161	155	171	246	177	223	445	.....	.....

Station: No. 4.

Road: Yonge Street.

Location: Seven miles north of Toronto.

Condition of Road: Good.

Class of Traffic	Weather—Day								Daily Average
	Monday— Cloudy	Tuesday— Cloudy and cold	Wednesday— Cold and clear	Thursday— Clear and warm	Friday— Clear and warm	Saturday— Cold and bright	Sunday— Bright	Total	
One horse light vehicle	48	13	23	33	18	23	91	249	35.5
One horse heavy vehicle.....	31	39	20	33	32	35	7	197	28.2
Two horse light vehicle.....	.....	.....	.....	2	.....	4	1	7	1.0
Two horse heavy vehicle.....	50	96	62	57	100	39	5	409	58.4
Runabout.....	10	.....	10	7	17	6	34	84	12.0
Touring Car.....	76	61	85	99	78	173	390	662	94.5
Motor Trucks	10	10	8	9	10	5	2	54	7.7
Total.....	225	219	208	240	255	285	530	.....	.....

Station: No. 5.
Road: Dundas Road.
Location: Six miles west of Toronto on Dundas Road.
Condition of Road: Excellent, hard, smooth, dry.

Class of Traffic	Weather—Day								Daily Average.
	Monday— Rain and sleet.	Tuesday— Cloudy.	Wednesday— Fair.	Thursday— Fine.	Friday— Cloudy and fine.	Saturday— Rain.	Sunday— Rain.	Total.	
One horse light vehicle.....	54	31	54	44	60	56	9	308	44.0
One horse heavy vehicle.....	19	15	16	13	17	8	.....	88	12.5
Two horse light vehicle.....	1	6	7	1	5	.....	.....	20	2.8
Two horse heavy vehicle.....	14	25	46	34	23	11	.....	153	21.8
Runabout.....	1	.....	2	5	4	.....	.....	12	1.7
Touring Car	6	1	9	21	15	10	1	63	9.0
Motor Trucks .....	.....	.....	1	2	1	.....	.....	4	.5
Total.....	95	78	135	120	125	85	10	.....	.....

Station: No. 6.
Road: Kingston Road.
Location: Two and one-quarter miles west of Whitby.
Condition of Road: Very muddy.

Class of Traffic	Weather—Day								Daily Average.
	Monday— Cloudy to showery.	Tuesday— Cloudy to rain.	Wednesday— Cloudy.	Thursday— Cloudy and cold.	Friday— Cloudy to fine.	Saturday— Fair.	Sunday— Fair.	Total.	
One horse light vehicle.....	68	95	70	41	66	113	102	555	79.2
One horse heavy vehicle.....	20	17	41	21	28	53	8	188	26.8
Two horse light vehicle.....	4	29	18	5	8	14	16	94	13.4
Two horse heavy vehicle.....	33	11	19	15	23	49	15	165	23.5
Runabout	10	1	7	3	5	8	35	69	9.8
Touring Car.....	6	16	14	3	12	9	16	86	12.2
Motor Trucks.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	141	169	169	88	142	246	192	.....	.....

Station: No. 12.
Road: Kingston Road.
Location: One mile and three-quarters east of Brockville.
Condition of Road: Muddy.

Class of Traffic	Weather—Day							Total	Daily Average.
	Monday— Cloudy.	Tuesday— Cold with wind.	Wednesday— Fair to stormy.	Thursday— Fair.	Friday— Fair.	Saturday— Clear and bleak.	Sunday— Clear and fair.		
One horse light vehicle.....	76	70	73	63	69	100	92	543	77.5
One horse heavy vehicle.....	36	45	28	39	34	56	10	248	35.4
Two horse light vehicle.....	8	12	5	13	6	7	4	54	7.7
Two horse heavy vehicle.....	27	43	33	49	54	36	.....	242	34.5
Runabout.....	4	8	.....	2	4	6	5	29	4.1
Touring Car.....	4	5	2	1	2	9	21	44	6.2
Motor Trucks.....	.....	4	2	2	.....	.....	.....	.....	.....
Total.....	155	187	193	168	169	214	132	.....	.....

Station: No. 13.

Road: Kingston Road.

Location: Three miles east of Belleville.

Condition of Road: Very good, numerous mud holes.

Class of Traffic	Weather—Day							Total	Daily Average.
	Monday— Showery.	Tuesday— Cold and wet.	Wednesday— Cloudy with rain.	Thursday— Cold with snow.	Friday— Cold with snow.	Saturday— Cold.	Sunday— Fine and warm		
One horse light vehicle.....	91	55	60	79	82	207	166	740	105.7
One horse heavy vehicle.....	66	42	70	41	62	111	2	394	56.2
Two horse light vehicle.....	6	.....	.....	.....	1	2	3	12	1.7
Two horse heavy vehicle.....	65	57	105	120	115	185	2	649	92.7
Runabout.....	1	3	4	1	.....	4	17	30	4.2
Touring Car.....	12	5	4	12	6	18	128	185	26.4
Motor Trucks.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	241	162	243	253	266	527	318	.....	.....

Station: No. 15.

Road: Brantford-Hamilton Road.

Location: Five miles east of Brantford on the Brantford-Hamilton Road.

Condition of Road: Very muddy.

Class of Traffic	Weather—Day							Total	Daily Average
	Monday— Rain to fair and cold	Tuesday— Rain	Wednesday Rain	Thursday— Fair, cold, and windy	Friday— Snow all day	Saturday— Fair and cold	Sunday— Fine		
One horse light vehicle.....	153	86	111	98	137	226	81	892	127.4
One horse heavy vehicle.....	8	16	11	16	13	19	.....	83	11.8
Two horse light vehicle.....	4	23	3	2	16	28	.....	76	10.8
Two horse heavy vehicle.....	42	65	27	29	45	41	.....	249	35.5
Runabout.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Touring car.....	12	3	8	1	1	.....	12	37	5.2
Motor trucks.....	.....	.....	4	.....	.....	.....	.....	.....	.....
Total.....	219	193	164	146	212	314	93	.....	.....

Station: No. 18.

Road: Huron Road (between Stratford and Sebringville).

Location: Three quarters of a mile east of Sebringville on the Huron Road.

Condition of Road: Very good—solid.

Class of Traffic	Weather—Day							Total	Daily Average
	Monday— Cloudy	Tuesday— Rain	Wednesday Cloudy	Thursday— Cloudy to rain	Friday— Fair to cloudy	Saturday— Fair	Sunday— Fair to cloudy		
One horse light vehicle	20	20	24	13	14	22	30	143	20.4
One horse heavy vehicle	2	1	1	4	1	.....	.....	9	1.2
Two horse light vehicle	9	3	5	3	17	14	.....	51	7.2
Runabout	3	.....	1	.....	2	2	5	13	1.8
Touring car .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Motor trucks .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	34	24	31	20	34	38	35	.....	.....

Station: No. 19.

Road: Longwoods Road.

Location: One-and-a-half miles west of Strathburn on the Longwoods Road.

Condition of Road: Very muddy.

Class of Traffic	Weather—Day							Total	Daily Average
	Monday— Cool and Cloudy	Tuesday— Cloudy with rain	Wednesday Cloudy with rain	Thursday— Cold and rain	Friday— Cloudy and cold	Saturday— Clear and Cool	Sunday— Fair and warm		
One horse light vehicle	40	45	48	54	54	52	68	361	51.5
One horse heavy vehicle	8	8	11	13	9	17	2	68	9.7
Two horse light vehicle	9	16	12	15	13	24	4	92	13.1
Two horse heavy vehicle	26	19	35	30	38	39	.....	187	26.7
Runabout	1	2	1	.....	.....	.....	.....	4	.5
Touring car	2	3	.....	.....	.....	6	20	31	.4
Motor trucks	1	.....	.....	.....	.....	1	.....	2	.2
Total	87	93	197	112	114	139	94	.....	.....

Station: No. 20.

Road: Talbot Street.

Location: One-and-a-quarter miles west of Aylmer on Talbot Street.

Condition of Road: Heavy.

RURAL MARKET ROADS

Class of Traffic	Weather—Day							Total	Daily Average
	Monday—Clear	Tuesday—Fine	Wednesday—Showers	Thursday—Showers	Friday—Showers	Saturday—Clear and cold	Sunday—Fine		
One horse light vehicle	31	16	20	14	10	34	53	178	27.4
One horse heavy vehicle	1	4	3	.....	1	5	.....	14	2.0
Two horse light vehicle	2	.....	4	.....	.....	3	.....	9	1.2
Two horse heavy vehicle	9	8	14	13	3	18	.....	65	9.4
Runabout	1	2	2	1	.....	.....	.....	6	.8
Touring Car	3	2	6	1	.....	.....	10	22	3.1
Motor Trucks	1	.....	.....	.....	.....	.....	.....	1	.1
Total	48	32	49	29	14	60	63	.....	.....

Station: No 3.

Road: Guelph-Fergus Road.

Location: One mile east of Fergus on the Guelph-Fergus Road.

Condition of Road: Very fair shape—some surface mud.

Class of Traffic	Weather—Day							Total	Daily Average
	Monday—Cold and cloudy	Tuesday—Cold and cloudy	Wednesday—Cold and clear	Thursday—Cold and clear	Friday—Cold and clear	Saturday—Cold and cloudy.	Sunday—Cold and cloudy		
One horse light vehicle	31	25	25	16	22	74	30	223	31.8
One horse heavy vehicle	13	9	15	10	8	25	7	87	12.4
Two horse light vehicle	4	10	8	9	3	20	.....	54	7.7
Two horse heavy vehicle	10	12	15	21	22	25	.....	105	15.0
Runabout	3	6	3	5	4	6	15	42	6.0
Touring Car	10	6	2	16	17	6	40	97	13.8
Motor Trucks	2	1	2	1	1	.....	10	17	2.4
Total	73	69	70	78	77	156	112	.....	.....

Station: No 7.

Road: Port Hope Gravel Road.

Location: Four miles west of Peterboro' on the Gravel Road.

Condition of Road: Hard and dry in spite of rain.

Class of Traffic	Weather—Day							Total	Daily Average
	Monday—Clear	Tuesday—Cloudy	Wednesday—Fine	Thursday—Fine	Friday—Clear and cold	Saturday—Fine	Sunday—Fine		
One horse light vehicle	25	26	25	20	16	63	53	228	32.5
One horse heavy vehicle	5	.....	5	2	5	2	1	20	2.8
Two horse light vehicle	16	2	4	.....	1	2	.....	25	3.5
Two horse heavy vehicle	19	4	6	2	8	5	.....	44	6.2
Runabout .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Touring Car .....	.....	.....	5	2	2	.....	7	16	2.2
Motor Trucks .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	65	32	45	26	32	72	61	.....	.....

Station: No. 8.

Road: Innisville Road.

Location: Three miles north of Perth on Innisville Road.

Condition of Road: Hard and good, holding some water.

Class of Traffic	Weather—Day								Daily Average
	Monday— Rainy	Tuesday— Cold	Wednesday Fine	Thursday— Fine	Friday— Fine.	Saturday— Rain	Sunday— Rain	Total	
One horse light vehicle	45	25	34	48	37	48	30	267	38.1
One horse heavy vehicle.....	19	22	14	43	19	68	4	189	27.0
Two horse light vehicle	2	1	1	.....	.....	3	2	9	1.2
Two horse heavy vehicle.....	40	64	36	53	36	53	2	284	40.5
Runabout.....	.....	.....	2	.....	.....	1	3	6	.8
Touring Car	9	5	15	12	20	15	11	87	12.4
Motor Trucks.....	6	6	7	6	6	.....	4	35	5.0
Total.....	121	123	109	162	118	188	56	.....	.....

Station: No. 9.

Road: Metcalfe Road.

Location: Three miles south of Ottawa.

Condition of Road: Muddy.

Class of Traffic	Weather—Day								Daily Average.
	Monday— Windy with snow.	Tuesday— Cloudy and cold.	Wednesday— Bright and cold.	Thursday— Clear and cool.	Friday— Clear and warm.	Saturday— Cloudy and cool.	Sunday— Rain.	Total.	
One horse light vehicle.....	28	49	60	64	79	103	64	447	63.8
One horse heavy vehicle.....	23	14	21	15	21	16	2	112	16.0
Two horse light vehicle.....	7	9	6	9	9	9	3	52	7.4
Two horse heavy vehicle.....	12	5	11	12	4	8	1	63	9.0
Runabout.....	.....	.....	.....	.....	.....	11	.....	.....	1.5
Touring Car.....	5	.....	4	11	15	.....	9	44	6.2
Motor Trucks.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	75	77	102	111	128	147	79	.....	.....

Station: No. 10.

Road: River Road (St. Lawrence).

Location: One mile west of Cornwall on the River Road.

Condition of Road: Very heavy.

Class of Traffic	Weather—Day								Daily Average
	Monday—	Tuesday—	Wednesday—	Thursday—	Friday—	Saturday—	Sunday—	Total.	
One horse light vehicle.....	124	133	115	124	120	267	121	1004	143.4
One horse heavy vehicle	30	46	23	36	52	82	5	274	39.1
Two horse light vehicle.....	22	26	30	18	64	40	1	201	28.7
Two horse heavy vehicle.....	32	45	58	15	30	81	1	262	37.4
Runabout.....	.....	.....	1	.....	.....	.....	15	16	2.2
Touring Car.....	9	4	1	12	4	10	.....	30	4.2
Motor Trucks.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	217	254	228	205	270	480	143	.....	.....

Station: No. 11.

Road: Athens Road.

Location: One and a half miles north of Brockville on the Athens Road.

Condition of Road: Much of it good, very wet in places.

Class of Traffic	Weather—Day								Total.	Daily Average.
	Monday— Rain and cloudy.	Tuesday— Rain.	Wednesday— Cloudy.	Thursday— Fair and cloudy.	Friday— Fair.	Saturday— Fair to cloudy.	Sunday— Fair.			
One horse light vehicle.....	37	61	52	78	53	132	68	481	68.5	
One horse heavy vehicle.....	18	2	14	17	8	50	8	117	16.7	
Two horse light vehicle.....	8	7	7	33	8	89	5	46	6.5	
Two horse heavy vehicle.....	8	25	20	10	25	22	2	112	16.0	
Runabout.....	.....	.....	3	4	1	1	6	15	2.1	
Touring Car.....	27	11	16	17	23	16	39	149	21.2	
Motor Trucks.....	.....	.....	2	.....	.....	.....	.....	2	.2	
Total.....	98	106	114	159	117	310	128	.....	.....

Station: No. 14.

Road: Madoc Road.

Location: Four miles north of Belleville on the Madoc Road.

Condition of Road: Excellent road, hard and dry.

Class of Traffic	Weather—Day								Total.	Daily Average.
	Monday— Rain to fine.	Tuesday— Rain to fair.	Wednesday— Rain.	Thursday— Rain to snow & rain.	Friday— Fair to rain.	Saturday— Clear and cold.	Sunday— Clear.			
One horse light vehicle.....	12	16	17	14	11	28	20	118	16.8	
One horse heavy vehicle.....	2	5	.....	1	.....	2	.....	10	1.4	
Two horse light vehicle.....	2	2	.....	2	4	.....	2	12	1.7	
Two horse heavy vehicle.....	11	24	11	10	16	24	.....	96	13.7	
Runabout.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Touring Car.....	4	2	1	1	1	2	.....	11	1.5	
Motor Trucks.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	30	49	29	28	32	56	22	.....	.....

Station: No. 16.

Road: Sydenham Road.

Location: Two miles north of Dundalk on the Toronto-Sydenham Road.

Condition of Road: Rather rough on surface, but hard.

Class of Traffic	Weather—Day								Total.	Daily Average.
	Monday— Rainy to cold.	Tuesday— Rainy to fine.	Wednesday— Threaten- ing to rain.	Thursday— Rain and snow.	Friday— Showery.	Saturday— Cloudy to fine.	Sunday— Fine.			
One horse light vehicle.....	15	17	18	9	14	28	26	127	18.1	
One horse heavy vehicle.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Two horse light vehicle.....	4	.....	4	.....	4	5	.....	17	2.4	
Two horse heavy vehicle.....	2	11	3	.....	1	13	.....	30	4.2	
Runabout.....	.....	.....	.....	.....	.....	.....	2	2	.2	
Touring Car.....	.....	.....	.....	.....	.....	.....	2	3	.4	
Motor Trucks.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	22	28	25	9	19	46	30	.....	.....

Station: No. 17.

Road: Owen Sound Road.

Location: Five miles west of Durham.

Condition of Road: Good in places, bad in places.

LOCAL TOWNSHIP ROADS.

Class of Traffic	Weather—Day							Total	Daily Average
	Monday— Clear	Tuesday— Fine	Wednesday— Showers	Thursday— Showers	Friday— Showers	Saturday— Clear and cold	Sunday— Fine		
One horse light vehicle	142	7	12	18	14	16	39	248	35.4
One horse heavy vehicle .....	.....	.....	.....	2	.....	.....	.....	2	.2
Two horse light vehicle	14	.....	4	.....	.....	.....	1	19	2.7
Two horse heavy vehicle	2	1	3	.....	1	4	.....	11	1.5
Runabout .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Touring car .....	.....	.....	.....	.....	.....	.....	2	2	.2
Motor trucks .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	158	8	19	20	15	20	42	.....	.....

Station: No. 3.

Road: Side Road.

Location: One mile east of Fergus off the Guelph-Fergus Road.

Class of Traffic	Weather—Day							Total	Daily Average
	Monday— Rain and sleet	Tuesday— Cloudy	Wednesday— Fair	Thursday— Fine	Friday— Cloudy to Fine	Saturday— Rain	Sunday— Rain		
One horse light vehicle	13	6	12	9	31	14	6	96	13.7
One horse heavy vehicle	8	4	6	6	2	2	.....	28	4.0
Two horse light vehicle .....	.....	.....	1	.....	.....	.....	.....	1	.1
Two horse heavy vehicle	2	2	1	5	.....	3	.....	15	1.8
Runabout .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Touring car .....	.....	.....	.....	.....	1	.....	.....	.....	.....
Motor trucks .....	.....	.....	.....	.....	.....	.....	.....	.....	.1
Total	23	12	25	20	34	19	6	.....	.....

Station: No. 6.

Road: Side Road.

Location: Two and one-quarter miles west of Whitby.

Class of Traffic	Weather—Day							Total	Daily Average
	Monday— Cold and cloudy	Tuesday— Cold and cloudy	Wednesday— Cold and clear	Thursday— Cold and clear	Friday— Cold and clear	Saturday— Cold and cloudy	Sunday— Cold and cloudy		
One horse light vehicle	2	4	2	1	6	5	4	24	3.4
One horse heavy vehicle .....	.....	.....	.....	.....	.....	1	.....	.....	.1
Two horse light vehicle .....	.....	1	.....	1	.....	5	.....	7	1.0
Two horse heavy vehicle .....	.....	.....	4	2	4	.....	.....	10	1.4
Runabout .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Touring car .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Motor trucks .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	2	5	6	4	10	11	4	.....	.....

Station: No. 7.

Road: Side Road.

Location: 4 miles west of Peterboro, off the Port Hope Gravel Road.

Class of Traffic	Weather—Day								Daily Average
	Monday— Clear	Tuesday— Cloudy	Wednesday— Fine	Thursday— Fine	Friday— Clear and cold	Saturday— Fine	Sunday— Fine	Total	
One horse light vehicle	4	8	12	11	4	26	22	87	12.4
One horse heavy vehicle .....	.....	8	6	10	.....	1	.....	25	3.7
Two horse light vehicle	5	7	4	4	4	5	.....	29	4.1
Two horse heavy vehicle	7	2	1	1	1	3	.....	15	2.1
Runabout .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Touring car	2	.....	.....	2	.....	1	.....	5	.7
Motor trucks .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	18	25	23	28	9	36	22	.....	.....

Station: No. 8.

Road: (Local) 3rd Line.

Location: Three miles north of Perth off the Innisville Road.

Condition of Road: Very good in spite of rains.

Class of Traffic	Weather—Day								Daily Average
	Monday— Cold and rain	Tuesday— Cold	Wednesday— Cold and cloudy	Thursday— Cold and cloudy	Friday— Cold, snow	Saturday— Cold and bright	Sunday— Fine and warm	Total	
One horse light vehicle	18	24	36	25	15	29	13	160	22.8
One horse heavy vehicle	14	17	17	22	21	25	5	121	17.4
Two horse light vehicle	4	14	4	17	10	16	.....	65	9.2
Two horse heavy vehicle	15	17	5	29	9	16	.....	91	13.0
Runabout .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Touring car .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Motor truck .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	51	72	62	93	55	86	18	.....	.....

Station: No. 11.

Road: Side Road.

Location: One and a half miles north of Brockville off the Athens Road.

Class of Traffic	Weather—Day								Daily Average
	Monday— Cloudy to showery	Tuesday— Cloudy to rain	Wednesday— Cloudy	Thursday— Cloudy to cold	Friday— Cloudy to fine	Saturday— Fair	Sunday	Total	
One horse light vehicle	24	25	36	89	30	51	47	302	43.1
One horse heavy vehicle	5	34	14	40	13	36	3	145	2.7
Two horse light vehicle	2	5	4	8	5	7	9	40	5.7
Two horse heavy vehicle	19	15	12	32	15	27	.....	120	17.1
Runabout	2	.....	.....	3	3	3	6	17	2.4
Touring car .....	.....	4	3	7	6	3	7	30	4.2
Motor trucks .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	53	83	69	179	72	127	72	.....	.....

Station: No. 12.

Road: Side Road (Lyn Road).

Location: One and three quarters miles east of Brockville.

Class of Traffic	Weather—Day								Total	Daily Average
	Monday— Cloudy	Tuesday— Rain	Wednesday Cloudy	Thursday— Fair	Friday— Fair to cloudy	Saturday— Fair to cloudy	Sunday— Fair			
One horse light vehicle	7	10	13	15	9	5	23	82	11.7	
One horse heavy vehicle.....	4	1	2	1	5	5	1	19	2.7	
Two horse light vehicle	1	1	.....	5	2	6	2	17	2.4	
Two horse heavy vehicle	6	8	6	5	5	2	.....	32	4.5	
Runabout .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Touring car	5	1	3	4	4	3	7	27	3.8	
Motor trucks .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	23	21	24	30	25	21	33	.....	.....

Station : No. 14.

Road : Side Road.

Location : Four miles north of Belleville off the Madoc Road.

Class of Traffic	Weather—Day								Total	Daily Average
	Monday— Showery	Tuesday— Cold and rain	Wednesday Cloudy, rain	Thursday— Cold and snow	Friday— Cold and snow	Saturday— Clear and cold	Sunday— Fine and warm			
One horse light vehicle	18	8	5	7	6	12	17	73	10.4	
One horse heavy vehicle.....	17	4	4	4	4	8	.....	41	5.8	
Two horse light vehicle	2	.....	.....	.....	1	.....	.....	3	.4	
Two horse heavy vehicle	9	12	11	6	8	15	.....	61	8.5	
Runabout	1	.....	.....	2	.....	.....	.....	3	.4	
Touring car .....	.....	.....	.....	.....	2	2	2	6	.8	
Motor trucks .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	47	24	20	19	21	37	19	.....	.....

Station : No. 15.

Road : Side Road.

Location : Five miles east of Brantford off the Brantford--Hamilton Road

Class of Traffic	Weather—Day								Total	Daily Average
	Monday— Rain to fair	Tuesday— Rain to fair	Wednesday Rain	Thursday— Rain to snow	Friday— Fine to Rain	Saturday— Clear and cold	Sunday— Clear			
One horse light vehicle.....	4	15	11	7	3	11	17	68	9.7	
One horse heavy vehicle.....	.....	1	.....	.....	.....	2	.....	3	.4	
Two horse light vehicle .....	.....	3	.....	.....	1	.....	2	6	.8	
Two horse heavy vehicle	9	13	9	6	14	21	.....	72	10.2	
Runabout .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Touring car .....	.....	2	1	.....	.....	2	2	7	1.0	
Motor trucks .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	13	34	21	13	18	36	21	.....	.....

Station : No. 16.

Road : Side Road.

Location : Two miles north of Dundalk off the Toronto-Sydenham Road.

Class of Traffic	Weather—Day									Total	Daily Average
	Monday— Rain to cold	Tuesday— Rain to fine	Wednesday Threaten- ing to rain	Thursday— Rain and snow	Friday— Showery	Saturday— Cloudy to fine	Sunday— Fine				
One horse light vehicle	2	4	1	1	1	3	22	34	4.8		
One horse heavy vehicle						1	4	5	7		
Two horse light vehicle	1	3	1		3			8	1.1		
Runabout											
Touring car											
Motor trucks											
Total	3	7	2	1	4	4	26				

Station : No. 17.

Road : Side Road.

Location : Five miles west of Durham.

Class of Traffic	Weather—Day									Total	Daily Average
	Monday— Rain to fair	Tuesday— Rain	Wednesday Rain	Thursday— Fair, very cold	Friday— Snow	Saturday— Fair and cold	Sunday— Fine				
One horse light vehicle	38	26	25	25	28	57	.....	199	28.4		
One horse heavy vehicle	4	7	2	5	2	10	20	50	7.1		
Two horse light vehicle .....	.....	1	.....	1	.....	6	.....	8	7.1		
Two horse heavy vehicle	17	18	7	13	18	13	.....	86	7.2		
Runabout .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Touring car	5	1	2	1	.....	.....	5	14	2.0		
Motor trucks .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	64	53	36	45	48	86	25	.....	.....

Station : No. 18.

Road : Side Road.

Location: Three-quarters of a mile east of Sebringville off the Huron Road.

Class of Traffic	Weather—Day									Total	Daily Average
	Monday— Cloudy	Tuesday— Rain	Wednesday Cloudy	Thursday— Rain	Friday— Fair	Saturday— Fair	Sunday— Fair to cloudy				
One horse light vehicle	20	20	24	13	14	22	30	143	20.4		
One horse heavy vehicle .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Two horse light vehicle	2	1	1	4	1	.....	.....	9	1.2		
Two horse heavy vehicle	9	3	5	3	17	14	.....	51	7.2		
Runabout .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Touring Car	3	.....	1	.....	2	3	5	13	1.8		
Motor trucks .....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	34	24	31	20	34	38	35	.....	.....

Station : No. 19.

Road : Side Road.

Location : One-and-a-half miles west of Strathburn off the Longwoods Road.

Class of Traffic	Weather—Day							Total	Daily Average
	Monday— Cool and cloudy	Tuesday— Cloudy with rain	Wednesday Cloudy with rain	Thursday— Cold and rainy	Friday— Cloudy and cold	Saturday— Clear and cool	Sunday— Fair and warm		
One horse light vehicle.....	10	4	9	7	8	7	7	52	7.4
One horse heavy vehicle.....	.....	4	4	7	6	2	.....	23	3.2
Two horse light vehicle.....	.....	1	4	.....	2	3	.....	10	1.4
Two horse heavy vehicle.....	15	4	7	6	6	10	.....	48	6.8
Runabout.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Touring car.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Motor trucks.....	.....	.....	.....	.....	1	.....	.....	1	.1
Total.....	25	13	24	20	23	22	7	.....	.....

Station : No. 20.
Road : Side Road.
Location : One-and-a-quarter miles west of Aylmer off Talbot Street.

APPENDIX No. 6

Analysis of Automobile Registration in the Province of Ontario for Year Ended December 31st, 1913.

(A).—BELONGING TO RESIDENTS OF THE PROVINCE.

I. Automobiles:

(1)—Seating.	No. of Cars.	Accommodating Persons.
2	2,664	5,328
3	218	654
4	1,460	5,840
5	10,750	53,750
6	405	2,430
7	937	6,559
8	5	40
10	4	40
14	2	28
16	4	64
22	4	88
32	5	160
Totals....	16,458	74,981

(2)—Make:

Canadian	11,217
American	4,947
British	139
French and Belgian	95
Unspecified	60
Total	16,458

(3)—Horsepower.

No. of Cars.	Total H.P.
2½	38
3	54
3½	42
4	68
6	102
8	96
10	1,990
12	816
14	350
Carried forward	383
	3,556

Horsepower.	No. of Cars.	Total H.P.
<i>Brought forward</i>	383	3,556
15	124	1,860
16	70	1,120
18	272	4,896
20	6,344	126,880
22	425	9,350
24	78	1,872
25	913	22,825
26	277	7,202
28	139	3,892
30	3,719	111,570
31	11	341
32	341	10,912
33	65	2,145
34	30	1,020
35	573	20,055
36	281	10,116
38	206	7,828
40	1,012	40,480
42	16	672
45	226	10,170
48	218	10,464
50	339	16,950
54	59	3,186
56	2	112
58	4	232
60	77	4,620
Over (av. 72)	14	1,008
Unspecified (av. 27)	240	6,480
Totals.....	16,458	441,814

II. Commercial:

(1) Delivery Wagons	237
(2) Motor Trucks	677

(3) Tonnage of Trucks:

Tons.	No. of Trucks.	No. of Tons.
1 or less	106	106
1½	10	15
2	220	440
3	44	132
4	12	48
5	22	110
6	16	96
8	1	8
Unspecified (av. 2.2)	246	541
Totals.....	677	1,496
Total of (1) and (2).....	914	

(4) Make:

Canadian	415
American	441
British	39
French and Belgium	5
Unspecified	14
Total	914

(5) *Horsepower of Trucks and Delivery Wagons:*

Horsepower.	No. of Cars.	Total H.P.
5	8	40
8	4	32
9	1	9
10	10	100
12	11	132
14	3	42
15	4	60
16	19	304
18	50	900
20	216	4,320
21	13	273
22	36	792
24	63	1,512
25	15	371
26	7	182
28	8	224
30	242	7,260
32	16	512
33	1	33
35	31	1,085
36	14	504
40	61	2,440
45	10	450
48	2	96
50	32	1,600
60	2	120
Unspecified (av. 28)	35	980
Totals.....	914	24,477

III. Motive Power of all Motor Vehicles Owned in Ontario:

Gasoline	17,110
Steam	39
Electric	223
Total	17,372

IV. Classification of Owners:(1) *Occupation:*

Farmers	966
Professional and unspecified (rural)	771
Professional and unspecified (urban)	5,335
Business men	7,326
Business firms	1,504
Doctors (rural)	239
Doctors (urban)	900
Liverymen and taxicab firms	331
Total	17,372

(2) *Residence:*

Rural and villages	3,161
Towns	3,493
Toronto	6,196
Ottawa	798
Hamilton	887
London	494
Other cities	1,343
Total	17,372

(B).—BELONGING TO NON-RESIDENTS OF THE PROVINCE.

I. Automobiles:

(1)—Seating.	No. of Cars.	Accommodating Persons.
2	751	1,502
3	73	219
4	524	2,096
5	3,001	15,005
6	146	876
7	910	6,370
8	2	16
Unspecified (av. 4.8)	22	106
Totals	5,429	26,190

(2) Horsepower.	No of Cars.	Total H.P.
3	40	120
5	14	70
7	7	49
10	41	410
15	26	390
18	52	936
20	837	16,740
22	201	4,422
25	353	8,825
26	47	1,222
27	45	1,215
28	104	2,912
30	1,104	33,120
31	8	248
32	296	9,742
33	58	1,914
35	326	11,410
37	239	8,843
40	693	27,720
45	175	7,875
48	335	16,080
50	156	7,800
54	65	3,510
60	145	8,700
Over (av. 72)	39	2,808
Unspecified (av. 27)	23	621
Totals.	5,429	26,190

II. Commercial:

Horsepower.	No. of Cars.	Total H.P.
22	5	110
25	4	100
28	5	140
30	23	690
35	5	175
40	9	360
45	4	180
50	19	950
Totals.....	74	2,705

III. Licenses Issued:

Months.	No. of Cars.
January	21
February	18
March	77
April	290
May	761
June	1,077
July	1,623
August	1,077
September	381
October	171
November	7
Total	5,503

IV. Residences of Owners:

(1) Canada.

Provinces	
Quebec	22
New Brunswick	2
Nova Scotia	1
Manitoba	7
Saskatchewan	1
Alberta	6
British Columbia	1
Total	40

(2) United States.

Cities or States.	No. of Cars.
New York City	101
Chicago	108
Rochester	101
Niagara Falls	423
Buffalo	1,163
Detroit	1,887
Ohio	125
Pennsylvania	20
Minnesota	17
Others	1,518
Total	5,463
Total number of vehicles owned by Non-residents	5,503

Motorcycles.

Approximate number (including tourists).. 2,900

Chauffeur Licenses.

Approximate number 3,514

STATEMENT OF MOTOR PERMITS AND LICENSES ISSUED IN THE PROVINCE OF ONTARIO.

	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Automobiles	203	535	553	1,176	1,530	1,754	2,452	4,230	11,339	16,266	22,875
Permits issued to motors owned in Ontario				517	550	589	1,020	1,977	7,338	11,939	17,372
To others				659	980	1,165	1,432	2,253	4,001	4,327	5,503
Motorcycles—											
Permits issued										1,754	2,900
To motorcycles owned in Ontario										1,648	2,650
To others										106	250
Chauffeur Licenses issued										2,965	3,514
Revenue				\$5,523.15	\$8,098.50	\$10,007.50	\$12,418.00	\$24,394.01	\$50,831.22	\$73,255.96	\$103,588.06

TAX SCHEDULES

Automobile tax schedules as applied to (1) locally owned automobiles, and (2) commercial trucks in Ontario would yield revenues as follows:—

A. New York schedule	\$101,340 00
B. Massachusetts	163,976 00
C. New Hampshire	658,115 00
D. Commission's proposal	261,992 00
E. Great Britain	658,115 00
F. Italy	884,129 00

To the revenue under the Commission's proposal should be added other items, as follows:—

(3) Motor cycles, at \$4.00	\$87,000 00
(4) Chauffeur licenses, at \$4.00	14,056 00
(5) Foreign tourists } at \$10.00	54,630 00
(6) Foreign trucks }	

Total	\$155,686 00
Locally owned automobiles and trucks	261,992 00

Grand total motor revenue	\$417,678 00
---------------------------------	--------------

A. NEW YORK STATE.

1. Automobile Schedule:

Horse Power (Brake).	Registration Fee.
Up to 25	\$5 00
26 to 35	10 00
36 to 50	15 00
51 and up	25 00

2. Commercial Trucks:

Same as automobile schedule.

3. *Motor Cycles* \$5 00

4. Chauffeurs:

5. Foreign Tourists:

6. Foreign Trucks:

Revenue: Above schedule would yield, if applied to Ontario (including items 1 and 2 only), \$101,340.00.

B. MASSACHUSETTS.

1. Automobile Schedule:

Horse Power (Brake).	Registration Fee.
Up to 20	\$5 00
20 to 30	10 00
30 to 40	15 00
40 to 50	20 00
50 and up	25 00

2. Commercial Trucks:

Same as automobile schedule.

3. Motor Cycles:

4. Chauffeurs:

5. Foreign Tourists:

6. Foreign Trucks:

Revenue: Above schedule would yield, if applied to Ontario (including items 1 and 2 only), \$163,976.00.

C. NEW HAMPSHIRE.

1. Automobile Schedule:

Horse Power (Brake).	Registration Fee.
Up to 15	\$10 00
16 to 30	15 00
31 to 40	20 00
41 to 50	25 00
51 to 60	30 00
61 and up	40 00

2. <i>Commercial Trucks</i>	\$10 00
3. <i>Motor Cycles</i>	3 00
4. <i>Chauffeurs</i>	5 00
5. <i>Foreign Tourists:</i>	
6. <i>Foreign Trucks:</i>	
Revenue: Above schedule would yield, if applied to Ontario (including items 1 and 2 only), \$658,115.00.	

D. COMMISSION'S PROPOSAL.

1. *Automobile Schedule:*

Horse Power (Brake).	Registration Fee.
Up to 20	\$10 00 per car.
21 to 30	0 50 per h.p.
31 to 40	0 60 per h.p.
41 to 45	0 75 per h.p.
46 and up	1 00 per h.p.

2. *Commercial Trucks:*

2 tons and less	\$10 00 per car.
Over 2 tons	5 00 per ton.

3. *Motor Cycles* \$4 00

4. *Chauffeurs* 4 00

5. *Foreign Tourists* (uniformly) 10 00

6. *Foreign Trucks* (uniformly) 10 00

Items 5 and 6 to be subject to reciprocal arrangements.

Revenue: Above schedule applied to Ontario would yield (including items 1 and 2 only), \$261,992.00.

E. GREAT BRITAIN.

1. *Automobile Schedule:*

Horse Power (Brake).	Registration Fee.
Up to 8	\$10 50
8 to 14	15 75
14 to 19	21 00
19 to 30	37 50
30 to 40	42 00
40 to 48	52 50
48 to 72	105 00
72 and up	210 00

2. *Commercial Trucks:*

Same as automobile schedule.

3. *Motor Cycles:*

4. *Chauffeurs* \$0 15

5. *Foreign Tourists:*

6. *Foreign Trucks:*

7. *Driving License* \$1 50

Revenue: Above schedule would yield, if applied to Ontario (including items 1 and 2 only), \$658,115.00.

F. ITALY.

1. *Automobile Schedule:*

Horse Power (Brake).	Registration Fee.
Up to 11	\$18 00
11 to 14	36 00
14 to 29	44 00
29 to 72 (plus \$1.00 for each h.p. over 29)	44 00
72 and up	100 00

2. *Commercial Trucks:*

Same as automobile schedule.

3. *Motor Cycles:*

4. *Chauffeurs:*

5. *Foreign Tourists:*

6. *Foreign Trucks:*

Revenue: Above schedule would yield, if applied to Ontario (including items 1 and 2 only), \$844,129.00.

APPENDIX No. 7

Supporting Areas of Ontario Cities

Cities are benefited by the general rural development of the Province as brought about by better roads, a matter which has been more fully treated elsewhere in this report. Urban centres with good roads are especially benefited by the main roads in their immediate vicinity. It may in a general way be assumed, that each city has a special interest in an area immediately surrounding it, sufficient to provide a food supply for the city, and the population within such area.

It is not advanced by the Commission, that the "Suburban Area" referred to in the classification of roads should necessarily coincide with the area of food supply or "Supporting Area." Such an area is probably too great to meet conditions of actual practice; but it is of use as representing an extreme standard of measurement.

Before further explanation is entered upon, attention should be called to one or two preliminary points. It is well known that cities are not, even in the matter of home-grown products, supported altogether by their immediate neighbourhoods. Thus for example, while potatoes are an excellent crop in Ontario, New Brunswick potatoes are quoted throughout the year on local markets. The reason for this, of course, is that in point of time and cost, the New Brunswick potato-grower is actually nearer the Ontario markets than are the Ontario growers themselves. Under present conditions farmers within comparatively short distances of large consuming centres, are unable to take up diversified farming to the extent that they would, if they could market their produce readily as it ripened. Thus farmers in close proximity to centres of population may be found devoted to grain crops only, because the farmer cannot afford to risk the growing of crops requiring immediate marketing, or because he finds that the time consumed on the road to market and back makes the cost of production on these classes of foods relatively higher than it is on other crops which keep longer and can be marketed when his time is worth less. Thus, while it is true that our cities do not, at present, draw all their food from immediate territory, it would seem that the most potent influence, in preventing such an arrangement, has been the heretofore inadequate means of local transportation in marketing.

Improvement in these facilities would, however, induce the abandoning, by nearby farmers, of low priced crops, which have heretofore carried the bonus of cheap marketing, for high priced crops upon which marketing charges will decrease as the farmer is brought closer to his market.

Then again, it should be pointed out that some districts are specially adapted to the production of certain products, such as fruits, and they should therefore, be properly expected to specialize in the production of these commodities. This factor has its effect in altering any general calculations that may be made for cities and their supporting area as a whole. Taking the case of any one supporting area, however, while a certain proportion of farmers would be producers of some special commodity for distant consumers (*e.g.* apples for the North-west) on the other hand, a certain proportion would be relieved from producing for the local centres by the fact of imports from distant producers (*e.g.* grain from the North-west) and, while it is not held that these two proportions would balance each other, yet they would tend to make any discrepancy in the general calculation less noticeable.

Still another point arises with the calculation of a large supporting area, such as that for the City of Toronto. A number of towns of various sizes are found within the area. In this instance, therefore, a special calculation has been made and the results tabulated with the other figures on the accompanying chart. In the case of the smaller cities, however, this difficulty is not incurred.

In all, calculations have been made for the twenty-one largest centres in Ontario. The results appear in the following table:—

Name of City.	Population.	Total supporting area. (Sq. miles.)	Radius of circle or part of circle of total supporting area. (Miles.)	Radius of area of immediate support. (Miles.)
Toronto, city only (Census 1911) ..	376,538	1676.8	.....	32.7
City, 1913 (Assessment figures) ..	445,575	2591.9	.....	35.3
With country (census)	458,432	2225.4	37.6	.....
With country, 1913 (Assessm't) ..	533,411	2591.9	40.6	.....
With country and towns, 1913 (Assessment)	573,728	2905.9	43.0	.....
Ottawa	87,062	621.25	19.8	16.8
Hamilton	81,969	730.84	15.9	11.8
London	46,300	326.18	10.1	8.3
Brantford	21,132	161.82	7.2	5.5
Kingston	18,874	126.77	8.9	7.8
Peterboro	18,360	148.49	6.9	5.6
Windsor	17,829	119.98	9.6	7.7
Berlin	15,196	104.28	5.8	4.8
Guelph	15,175	97.95	5.6	4.8
St. Thomas	14,054	79.98	5.1	4.4
Stratford	12,946	75.71	4.9	4.3
Owen Sound	12,558	99.67	5.9	5.1
St. Catharines	12,484	101.76	8.0	6.4
Chatham	10,770	60.35	4.4	3.8
Galt	10,299	68.04	4.6	4.0
Sarnia	9,947	80.21	7.8	6.7
Belleville	9,876	65.88	6.3	5.4
Brockville	9,374	73.21	6.8	5.8
Woodstock	9,320	53.69	4.2	3.7
Niagara Falls	9,248	69.56	6.6	5.1

The results given in the above table are based upon calculations in which both the general items of food entering into the dietary of the average family, and the yield of these items in the various districts respectively, for which estimates are presented, have been taken into account. The "average family" was taken consisting of five members. There was then worked out the acreage required to supply the various food items appearing. The total area required for the support

of fifty people for one year was thus found to be 109.14 acres. It is to be noted that this acreage provides only the amounts of each kind of food grown locally and consumed by the unit of fifty people in one year and no account is taken whatever of other foods, such as imported fruits, etc., which are consumed in addition. The 109.14 acres thus represents the area required to provide home-grown products only. It is to be further noted that this acreage represents only the net area required, and this whole area of land would need to be cultivated to provide the required amount of food. In the case of each area for which a calculation was made, therefore, account was taken of the proportion between cultivated or producing land and total acreage.

It will be noted that when the circles designating the supporting areas are placed upon a map, certain of these, if carried through, would intersect; the conclusion being that the supporting areas of various cities are found to overlap each other. It therefore becomes necessary to make allowances in these cases. The Toronto and Hamilton areas are one instance. In the original calculation for Toronto, however, its areas were taken as being semi-circles, and it is seen on the map that if a straight line were drawn through Toronto, running approximately parallel with the Lake Shore, it would cut the "Toronto" circles before they reach the "Hamilton" circles. The difficulty is thus obviated: it is assumed that the additional area shown as falling south of the aforesaid line and west of the city, would be balanced by those parts of the area shown as lying over Lake Ontario to the east of Toronto and within the circle making the boundary of the Guelph area.

In the case of overlapping areas, the smaller city is favoured in that the amount of overlapping, when taken from the larger area, makes but a slight difference in its total, whereas the same amount taken from the smaller area would make a very appreciable difference. Furthermore, the areas where overlapping takes place lie, with one exception, closer to the smaller than to the larger urban centre. In the case of the intersecting of the "St. Catharines" and "Niagara Falls" circles attention is drawn to the fact that the original calculation for "St. Catharines" was made on the basis of a semi-circle, while as a matter of fact, the "St. Catharines" circles have been extended to the Lake Shore, thus allowing a deduction from this area sufficient to permit the completion of the "Niagara Falls" circle.

APPENDIX No. 8

Postal Routes

In view of the use of the roads of the Province for postal purposes, the following three tables are of considerable interest. It may be pointed out that the recent introduction of the parcel post delivery system will further tax the roads of the country. The effectiveness of that service—thereby lessening the cost of collection and delivery as well as greatly enlarging the area of supply—will largely depend upon the character of the roads to be used.

TABLE 1.

GROSS MILEAGE, BY PROVINCES, OF RURAL DELIVERY ROUTES IN CANADA.

Prince Edward Island	1,900
Nova Scotia	900¾
New Brunswick	2,146
Quebec	2,908¼
Ontario	23,594
Manitoba	699½
Saskatchewan	684½
Alberta	742
British Columbia	681
Grand total	34,256

TABLE 2.

POSTAL REVENUE FOR YEAR ENDED 31ST MARCH, 1913.

Ontario	\$5,916,512 05
Quebec	2,504,935 36
Nova Scotia	620,089 14
New Brunswick	440,338 46
Prince Edward Island	80,531 21
Manitoba	1,566,194 30
Saskatchewan	1,047,353 86
Alberta	965,449 37
British Columbia	1,225,884 98
Yukon	15,140 85
	<hr/>
	\$14,382,429 58

TABLE 3.
POSTAL ROUTE STATISTICS (For 32 Counties)

County	Mileage of Postal Service		Expenditure of Postmaster General's Department year ended March 31st, 1913				Average ex- penditure out- side municipal- ities per mile.
	Outside municipalities* (including distances of one mile or over in rural parts)	Within municipalities* (including distances less than one mile in rural parts)	Total Mileage.	Outside muni- cipalities.	Within muni- cipalities.	Total ex- penditure.	
				\$	\$	\$	\$
Brant	102 4	3	105	9,204 98	1,773 77	10,978 75	90 24
Bruce	882	9	891	12,505 75	3,815 24	16,320 99	14 20
Carleton	524	2	526	14,203 97	16,445 89	30,649 83	27 11
Dundas	305	4	309	3,797 47	996 20	4,793 67	12 45
Durham	450	3	453	6,969 03	1,421 38	8,390 41	15 49
Dufferin	291	4	294	7,972 43	784 15	8,756 57	27 39
Essex	308	30	427	6,515 71	4,790 64	11,306 35	16 41
Elgin	667	7	674	13,686 68	2,217 67	15,904 35	20 51
Frontenac	337	1	338	4,993 95	2,134 18	7,128 13	14 85
Grenville	340	2	342	7,577 51	955 50	8,533 01	22 82
Glenora	229	5	234	4,366 37	1,463 40	5,829 77	19 07
Glenora	983	11	994	20,402 04	3,856 80	24,258 84	20 76
Grey	564	5	569	10,866 25	1,991 63	12,857 88	19 25
Hastings	354	3	357	5,748 29	1,582 89	7,331 18	16 24
Halton	326	4	330	7,822 00	1,882 02	9,704 02	23 97
Haldimand	116	1	117	1,654 49	462 16	2,116 65	14 26
Haliburton	403	8	411	10,919 85	4,755 22	15,675 07	27 09
Huron	640	10	650	13,891 63	3,787 36	17,278 99	21 70
Kent	587	6	593	9,195 84	2,536 01	11,731 85	15 69
Lanark	491	1	492	8,357 45	1,502 52	9,859 97	17 02
Leeds	273	3	276	6,294 64	1,347 73	7,642 37	23 05
Lincoln	835	5	838	15,362 68	2,743 50	18,106 18	18 39
Lambton	1,268	9	1,277	20,527 47	2,461 62	22,989 09	16 05
Middlesex	70	6	76	6,034 56	1,554 14	7,588 70	86 28
Norfolk	64	1	65	1,145 59	25 00	1,170 59	17 90
Northumberland	494	11	505	9,877 67	2,276 05	12,153 72	19 96
Ontario	1,037	34	1,071	16,954 08	4,048 62	21,002 70	16 34
Oxford	215	4	219	5,369 75	1,812 17	7,181 92	24 97
Peel	572	5	577	13,004 73	2,700 14	15,704 87	22 73
Perth	516	3	519	9,247 06	1,829 74	11,076 80	17 92
Peterborough							

Prescott	195	2	197	5,202 28	772 75	5,975 03	26 67
Prince Edward	218	1	219	4,031 17	603 25	4,634 42	18 49
Renfrew	957	9	966	14,134 67	3,800 81	17,934 47	14 77
Russell	186	6	192	4,029 01	1,393 73	5,422 73	21 66
Simcoe	783	13	796	15,275 33	10,878 33	26,153 66	19 50
Stormont	219	5	224	4,153 76	1,782 33	5,936 09	18 52
Victoria	471	5	476	9,269 13	1,488 10	10,757 23	19 67
Waterloo	490	6	496	10,773 90	3,580 74	14,354 64	21 97
Welland	150	10	160	5,947 01	4,282 85	10,229 86	39 64
Wellington	656	8	664	16,611 36	2,997 10	19,608 37	25 32
Wentworth	349	2	351	10,081 67	8,577 25	18,658 92	28 85
York	369	17	386	108,267 67	6,289 92	114,557 59	293 40
Unlocated	69	1	10	217 80	14 03	231 83	24 20
Total	19,384	265	19,647	492,362 67	125,814 44	618,058 26	1,318 22
Averages for the 32 counties	461	6	468	411,717 73	2,995 24	14,710 15	30 81

*Urban.

APPENDIX No. 9

Compendium of Highway Organization in Canada and the United States

A. IN CANADA.

From information obtained through the courtesy of Highway officials in other Provinces of the Dominion, the following summary has been compiled.

I. QUEBEC.

Highways are divided into two classes—

(1) Provincial roads built entirely by the Government on its own initiative and under authorization of the Lieutenant-Governor-in-Council. The Road Department determines the location, nature and cost of the work, takes possession of such roads (whether or not subject to municipal authority), may expropriate rights of way and fix the share per mile or part of a mile to be paid by the municipalities interested. The latter may by resolution propose a certain contribution based either upon a general tax collection roll prepared for the purpose and submitted to the Department, or by means of a special assessment on ratepayers bound to maintain roads.

(2) Municipal roads built by the municipalities according to the two following systems:—

(a) (According to the Act of 1911). The Government grants the local municipalities half of the amount expended on macadamizing and gravelling, the maximum grant being in the first instance \$1,000, in the second \$500. The Government also refunds one-third of the amount expended for replacing wooden bridges (less than eight feet span) by concrete culverts or concrete or corrugated steel pipes. When maintenance of earth roads is in charge of the municipal council, the municipality is entitled to an annual subsidy equal to one-half of the amount expended, the maximum grant being \$400 if all the roads are under the control of the council, and \$200 if the by-roads only are so controlled. Road plants are loaned to the municipalities—one-half of the cost of operation being paid by them; an instructor with a Government-paid salary is also furnished.

(b) (According to the Act of 1912). The Government is authorized to borrow \$10,000,000 on debentures. Local municipalities are granted appropriations for this fund, limited in the case of most towns and village municipalities

to the amount required for the improvement of the main road only. County councils may also take advantage of this system, although up to the end of 1913, only one had done so. These municipalities are required to pay two per cent. interest on every appropriation for a period of forty-one years, the remainder of the interest and the sinking fund being provided by the Government. The initiative must be taken by the municipalities themselves, in the form of a by-law with the deposition of promissory coupons. Roads and bridges operated under this Act remain (or become by virtue of the Act) the property of the municipality, but all macadam work done in the Province under either Act is subject to the direction of the Department of Roads, which imposes upon the municipalities specifications with inspection and acceptance of the particular roads. A monthly report to the Minister is required from the municipalities, giving estimates of the work performed and unfinished and of financial details of work being done under the officer of the Road Department. Arrangements exist whereby municipalities not wishing to assume the interest indebtedness may raise contributions by special assessment, and in cases where the roads are under charge of the corporation, the amounts paid for interest on the Government grant are deducted from the amount due from the ratepayers responsible for the maintenance of such roads. Municipalities may not benefit by both Acts.

For the operation of the first Act (i.e., of 1911) the Legislature grants each year an appropriation out of the ordinary revenue (\$250,000 in 1913). The interest and sinking fund for Government debentures under the second Act (i.e., the various municipalities. Under these inspectors are road-masters appointed by the municipalities go to the consolidated revenue of the Province.

II. NOVA SCOTIA.

The head of the Highway Department is the Road Commissioner appointed by the Lieutenant-Governor-in-Council; he is an official of the Department of Roads and Mines, and has under him an assistant commissioner who must be an engineer of experience. The latter has control of two travelling inspectors and instructors and the clerical staff. It is the duty of the inspectors to report to the commissioner as to the condition and requirements of roads and short bridges in the various municipalities. Under these inspectors are road-masters appointed by the former and acting as foremen.

Highways are divided into first, second and third classes on a traffic basis; at the present time bridge grants are limited to structures on roads of the first class, but may be extended to the other two if traffic conditions should warrant it.

Municipal road revenues are derived from the Government grant, and from commutation of Statute Labour. Co-operation between the municipal authorities and the road inspectors is encouraged. No bonds are issued and assessment is entirely under the control of Municipal Councils. There is also a "Motor Vehicle Act Road Improvement Fund," which is part of the Provincial Revenue.

III. NEW BRUNSWICK.

The Provincial Highway authority is the Provincial Road Engineer, who is an official of the Board of Public Works, and is appointed by the Lieutenant-Governor-in-Council to hold this office during pleasure. He has the supervision and general control over the building, maintenance and repair of the highways.

of the Province, and has under him County Inspectors of Highways wherever the latter are appointed to have control over the supervisors for each highway division in any County. There is no classification of roads.

A road tax is annually levied for the general repair and maintenance of highways in each county, every male person between the ages of 21 and 60 resident in the parish paying a poll tax of \$1.50, and an amount not less than one-fifth per cent. upon the assessed value of real and personal property including income. This last income tax is extended to all persons, companies and estates. Municipalities may increase the rate of this road tax, which is paid to the County Treasurer, and is expended on the order of the Minister of Public Works in the division where it is collected.

In lieu of the road tax, resident ratepayers may perform Statute Labour before July 15th in each year; if notice is given before May 1st, Road Supervisors may call upon residents to give Statute Labour in lieu of taxes.

IV. BRITISH COLUMBIA.

The Department of Public Works has control over all roads and bridges in the Province—the executive head being the Public Works Engineer, who must prepare plans, maps and estimates for all public works, and act in a general advisory capacity. The Department is authorized to make road alterations and expropriate any private road after due notice, compensation being paid for such lands only as have buildings or form part of an orchard or garden.

A road tax of \$2.00 per head is imposed on all males between the ages of twenty-one and sixty in the cities and district municipalities—military persons being exempted.

V. SASKATCHEWAN.

The Provincial highway governing body is the Board of Highway Commissioners, consisting of three members appointed by the Lieutenant-Governor-in-Council, one of whom shall be appointed as a chairman. They receive salaries and have duties assigned to them as may be determined upon from time to time by the Lieutenant-Governor-in-Council. There is associated with the Board for advisory purposes a committee of two members, one appointed annually by the Provincial organization representing rural municipalities and one by the Provincial organization representing urban municipalities. These members are allowed such per diem expenses and allowances as are fixed by the Lieutenant-Governor-in-Council for attendance at meetings where they are requested to be present by the Chairman of the Board of Commissioners. This Commission reports to the Minister of Public Works annually. Its duties are:—

(1) To lay out, plan and determine upon a system of public highways for the province which may from time to time be altered or modified as the Board may determine.

(2) To determine upon the most feasible and economic methods for constructing, improving and maintaining public highways.

(3) To furnish the officers of the municipalities with information respecting the construction, improvement and maintenance of public highways.

(4) To appoint such engineers, inspectors and officers as are necessary for the proper carrying out of the duties of the Board and the provisions of this Act. All such appointees shall receive such remuneration as shall be determined by the Lieutenant-Governor-in-Council.

The Board may with the consent of the Minister of Public Works spend such sums of money as are deemed advisable upon construction and improvement of Public Highways, and it may enter into agreements or make contracts for construction of or improvements on such highways. The Lieutenant-Governor-in-Council retains the right to make such general regulations regarding the expenditures of the Board as may be deemed expedient.

An attempt was first made to divide the expenditure in all municipalities equally among them, but this was abandoned on account of the varying needs of conditions met with in the various districts. The original division of funds in 1912 for road improvements and bridges was \$1,300,000 for the former and \$300,000 for the latter.

The attention of the Board was directed chiefly toward the main highways but it was found there were several roads, bridges, etc., which, though not on main roads, were beyond the power of the municipalities to construct and were taken over by the Board. The Board assists municipalities to the extent of 50 per cent. of the cost of improvements made when these improvements are according to the regulations adopted by order of the Lieutenant-Governor-in-Council.

Educational work has been attempted through the distribution of bulletins and specifications, by correspondence and through the staff of inspectors. A limited amount of experimental work has been attempted with only partial results.

The Board has instituted a Road Drag Competition with excellent results among the different municipalities. The Board has so far devoted its energies to the main roads, leaving the feeders to the municipalities, except insofar as concerned its advisory capacity. The Board finds that best results are obtained by its own road gangs who are building roads exclusively, and better work is done at a lower cost than rural gangs recruited from the farmers.

All bridges over 20 feet span are constructed and maintained by the Commission, which also operates and controls all ferries and drainage and water supply throughout the Province, with control covering all surveys for purposes of road diversion.

The Province derives its funds for permanent highway construction from Capital account (sale of Bonds); for maintenance work from Revenue account. The rural municipalities obtain their funds for highway purposes from the following sources:—

For permanent construction work debentures may be issued. This includes bridges and ferries, buying gravel pits or acquiring land. Maintenance work may be carried on out of the general revenue of the Municipality.

B. HIGHWAY IMPROVEMENT IN THE UNITED STATES.

For the purpose of affording information as to the progress of highway improvement in the United States, which might be helpful to the Province of Ontario in working out a plan for future highway improvement, information has been assembled and is herewith submitted concerning eight representative American States, namely, Massachusetts, New York, Pennsylvania, Ohio, Michigan, Minnesota, Wisconsin, and California.

In order to afford an intelligent idea as to the resources and needs of the respective states as well as their achievements in highway improvement, information is submitted as to area, population, wealth, taxation, general expenditures, etc. Information of this character is followed by a concise statement showing progress of state highway work, the lines along which development has proceeded, and wherever practicable, the cost of construction and maintenance is given. A digest of highway legislation and organization of other States in the American Union is appended.

I. MASSACHUSETTS.

GENERAL INFORMATION.

The State has a land area of 8,039 square miles, or about one-fifth that of Old Ontario. The land in farms comprises a little over half the gross area or 4,494 square miles. The population in 1910 was 3,366,416 or 418.8 per square mile of land area, of which 92.8 per cent. was urban and 7.2 per cent. or 241,049 was rural, thus giving an average rural population per square mile of farm land of 53.6. There were one hundred and eighty-five municipalities having a population of 2,500 inhabitants or more in 1910. It is thus evident that the road system in Massachusetts is practically interurban in character and must carry a traffic between cities rather than from farms to cities. Conditions also indicate a growing preponderance of motor traffic. This is further indicated by a traffic census conducted in each of the years 1909 and 1912 by the State Highway Commission, which showed that in the three year period the total of all vehicles increased 42 per cent. while light one-horse vehicles decreased 5 per cent., and motor vehicles increased 131 per cent. While motor vehicles comprised 42 per cent. of the traffic in 1909, the percentage had increased to 57 in 1912. This indicated that the roads of that State must be built more with a view to motor traffic than horse traffic. The assessed value of all property in the State in 1912 was \$5,479,279,693, an average per square mile of land of about \$681,587 and average per capita of \$1,627. The total mileage of roads in the State outside of cities is about 17,272. The average assessed valuation of property in the State per mile of road is therefore \$317,234. It is thus evident that the State is amply able to construct and maintain the costly types of road which its traffic conditions in general warrant. The mileage of roads is an average of 2.148 miles per square mile of land area, which closely approximates the average for England and France when the total mileage of those two countries is pro-rated over their land area.



Gravel Road, State of Massachusetts. This road, carrying much fast motor traffic, is maintained by oiling and the weekly use of the log drag.



Macadam Construction in Massachusetts.

POLITICAL ORGANIZATION.

There are fourteen counties in the State for each of which the governing body is a county commissioner and two associate commissioners elected by the people. The county commissioners act rather as a court of appeal in road matters than as a direct administrative body, the latter function resting with the smaller units designated as towns and cities. In towns the governing body is a board of three selectmen chosen at the annual town meeting. In addition to the selectmen there is a highway surveyor or road commissioner who is elected in some of the towns and appointed by the selectmen in other towns.

CLASSIFICATION OF HIGHWAYS.

The public highways of the State are classified as "State Highways," "County Highways," and "City or Township Highways." The State highways are laid out by the State Highway Commission upon petition of the county, town or city authorities and thereafter are under the absolute control of the State Highway Commission, the State paying the entire cost of construction from money derived from State bond issues and receiving as a refund from the counties in which the respective roads are located 25 per cent. of such construction cost. The maintenance cost is paid by the State, partly from motor vehicle fees and partly from legislative appropriations, and the town contributes an amount not to exceed \$50 per annum for each mile of such State highway. The county, town and city highways are constructed and maintained by those respective units, except that the State aids the small towns by expending 15 per cent. of State highway appropriations as follows:—

One-third in towns of less than one million dollar valuation, with no contribution from the town.

One-third in towns of less than one million dollar valuation, the town contributing an equal amount.

One-third in towns of over one million dollar valuation, the towns contributing an equal amount.

STATE INDEBTEDNESS FOR HIGHWAYS AND OTHER PURPOSES.

The total debt of the State on December 1st, 1912, was \$43,112,583.33 or about .80 per cent. of the valuation. As a credit the State has a sinking fund of \$22,322,573.52, so that the net direct debt on that date was \$20,790,009.81 or about .38 per cent. of the valuation. The State had a contingent debt of \$58,440,242.16 on December 1st, 1912, but this was a loan on the credit of the State to certain metropolitan districts and is assessed on the districts, no portion of the sum being a liability on the State at large. The average rate of interest on entire bonded debt was 3.21 per cent., and the average income on sinking funds was 3.66 per cent.

The State highway bonds outstanding December 1st, 1912, amounted to \$6,965,000 against which should be credited \$2,463,887.67 sinking fund, leaving the net debt of \$4,501,112.33 or about .08 per cent. of the valuation, on which the annual interest amounts to about \$236,000. Of this bond issue \$1,160,000 were thirty year, three per cent. bonds; \$176,000 three per cent. serial bonds; \$3,365,000 thirty year, three and one-half per cent. bonds, and \$2,264,000 three and one-half per cent. serial bonds. The total amount of state bonds issued for highway work

to December 1st, 1912, amounted to \$7,342,000. To this should be added State highway bonds authorized but not issued, amounting to \$1,545,000 making total issued and authorized to December 1st, 1912, \$8,887,000. The legislature provided in 1912 for the issuance of State bonds during 1913, 1914, 1915, 1916 and 1917, to an amount not to exceed \$5,000,000, not more than \$1,000,000 of which should be expended in any one year, the bonds to be payable in not more than fifteen years, and to bear interest at not more than four per cent. This would indicate of bonds issued, authorized, or provided for by the legislature for highway purposes \$13,887,000.

REVENUES AND EXPENDITURES.

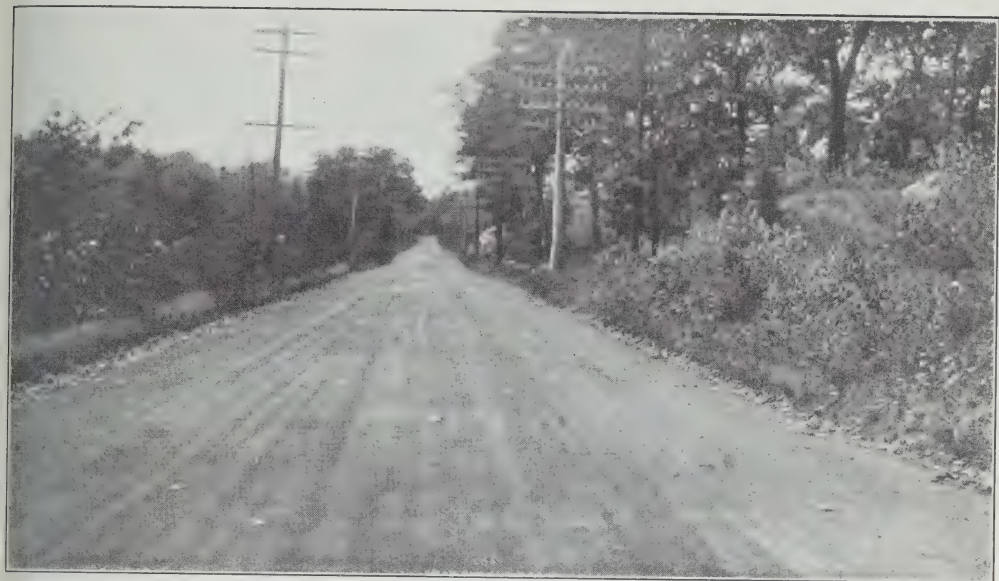
The total revenues of the State for 1912 were \$15,842,000 and the actual running expenses of the State for that year were in round figures \$15,760,000. The actual revenues of the State for 1912 amounted to \$9,592,163.75 exclusive of the direct property tax, which varies from year to year according to the needs of the State and amounted in 1912 to \$6,250,000. These revenues were made up as follows:—

Corporation tax (net)	\$2,244,014 30
The National Bank Stock Tax (net)	385,619 71
Savings Bank Tax	1,869,055 50
Collateral Legacy Tax (old law)	113,307 09
Inheritance Tax (new law)	2,041,099 76
Insurance tax and licenses	703,228 69
Excise tax on foreign corporations	257,581 32
Excise tax on life insurance companies	472,440 78
Liquor licenses	827,535 22
Secretary's fees	229,225 42
Fees from courts of probate, etc.	24,492 73
Interest on bank balance	38,445 66
Income from institutions	53,317 98
Miscellaneous	332,798 59
	<hr/>
	\$9,592,163 75

To give an idea as to the purpose for which the State revenues were expended, a few of the principal items are given as follows:—

Legislative Department	\$470,000 00
Judiciary	634,000 00
Military	728,000 00
Health	319,000 00
Harbours and Highways	601,000 00
Agriculture, Forestry, Fisheries and Game	557,000 00
Public Buildings	1,039,000 00
Charitable	4,588,000 00
Reformatory and Correctional	1,211,000 00
Educational	1,493,000 00
Interest	1,246,000 00

The average per capita expense of conducting the State Government is about \$4.70, and of this amount 40 per cent., or about \$1.85 per capita is paid in the form of direct property tax. This property tax would mean an average rate in 1912 on assessed value of about 1.1 mills. The total amount of taxes assessed for state, county and municipal purposes as on April 1, 1912, was \$74,552,306, which, on a valuation of \$5,479,279,693 would make a total tax rate of .013. Of this amount \$6,250,000 was for state tax; \$4,353,312.83 for county levies, and \$69,948,993.17 for city and town purposes.



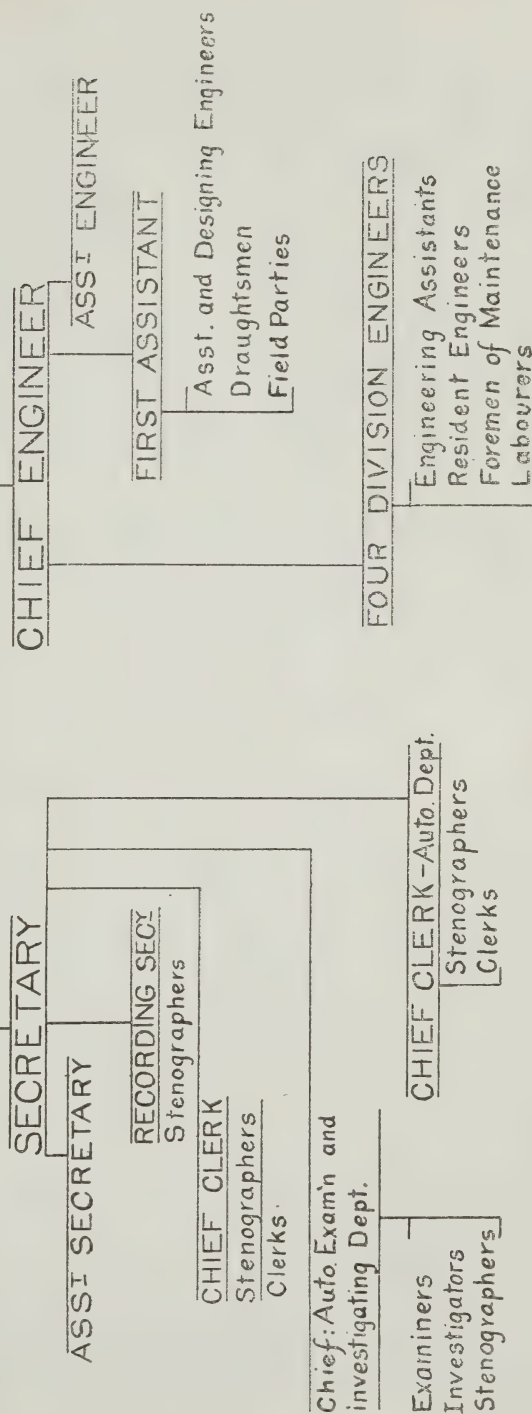
Gravel Road, State of Massachusetts. This road, carrying 1,500 motor vehicles daily, is treated with a light bituminous oil, carrying 40 per cent. asphalt.



A Bituminous Surface Treatment, State of Massachusetts.
Using an oil carrying 70 per cent. of asphalt.

Executive Organization of the
MASSACHUSETTS HIGHWAY COMMISSION

THREE COMMISSIONERS



HIGHWAY CONSTRUCTION AND MAINTENANCE.

The funds available for the State Highway Department consist of \$1,000,000 annually derived from State bond issues, an annual appropriation by the legislature from current revenues of \$250,000 for maintenance of State highways, an annual estimated net revenue of about \$500,000 from motor vehicle registration fees, or a total of about \$1,750,000.

The total length of State highways completed to November 30, 1912, was 920 miles, and the total expenditures since the work began, including the planting of trees, amounted to \$8,379,079.66 or an average outlay per mile of \$9,107.69. The aid granted to small towns as explained under "Classification of Highways" amounted, Nov. 30, 1912, to \$600,000, the towns contributing about \$385,000. This expenditure has resulted in the improvement of about 300 miles of road at an average outlay of \$3,283.33 per mile. The character of the construction of State highways is indicated by the fact that nearly 730 miles out of a total of 920 miles have been treated with some bituminous material. The experience of the Commission is that the application of the bituminous binder under pressure has been found to produce the most uniform results. As to maintenance, attention is called to the fact that until about five years ago there was only about \$100 per mile available for the maintenance of State highways. The cost of maintenance is now stated to be over \$500 per mile per annum. In fact it is generally admitted that the cost is now over \$600 per mile.

ORGANIZATION OF STATE HIGHWAY COMMISSION.

The State Highway Commission was established in 1893, and consists of three members appointed by the Governor for three year terms, one term expiring each year. The Chairman receives a salary of \$5,000 per annum, and with the other two members of the Commission has supervision over State highways, the granting of aid to small towns, automobile registration, and the supervision of telephone and telegraph companies. There is a central office in Boston in which are located the secretary and the various assistants in the Highway Department, the automobile department being under the direction of a chief clerk; the engineering department under the direction of the chief engineer. The State is divided into five divisions, each in charge of a division engineer, one located at Boston, one at Middleboro, one at Pittsfield, one at Greenfield and one at Worcester.

AUTOMOBILE LEGISLATION.

The State levies a tax on motor vehicles according to horse-power as follows: less than 20 horse-power \$5.00; 20 to 30 horse-power \$10; 30 to 40 horse-power \$15; 40 to 50 horse-power \$20; 50 horse-power and above \$25. Other provisions are made for commercial vehicles, etc. The amount derived from this fund is applied to maintenance. The total receipts for the year ending November 30, 1912, including fines, were \$645,496.30, from which the expense of registration, etc., amounting to \$103,261.53 should be deducted, leaving about \$542,000 for maintenance.

II. NEW YORK.

GENERAL INFORMATION.

The state has a land area of 47,654 square miles. The land in farms comprises 34,439 square miles. The population in 1910 was 9,113,614 of which 78.8 per cent. was urban and 21.2 per cent or 1,928,120 was rural. The population per square mile of land areas was 191.2, and the rural population per square mile of farm land was 56. The assessed value of all property in the state in 1912 was \$11,022,985,914, the ratio of assessed to actual value being 87.74 per cent. This would give an average of actual property value per square mile of land area of \$264,406, and an average of actual property wealth per capita of \$1,382. The total road mileage in the state is 79,279 and on this basis the average actual value of taxable property per mile of road would be about \$159,000. The average mileage of roads per square mile of farm land in the state is 2.302, or slightly greater than the mileage for Massachusetts, and closely approximating the mileage of England and France.

The number of acres of farm land in 1910 was 22,030,367. There was an average increase in value per acre in the period from 1900 to 1910 of \$7.79. This would make a total increase in the value of farm lands of nearly \$172,000,000 or nearly one and three-quarter times the total amount of state bonds issued and authorized for road building. And, when it is considered that only 15 per cent. of the property taxes are paid by rural districts, the burden resting upon farm property by reason of road in improvement is almost nominal when compared with the growing wealth of the farming sections.

POLITICAL ORGANIZATION.

There are sixty-one counties in the state in each of which the governing body is a board of supervisors. The counties are in turn divided into 935 towns in which the governing body is a town board of supervisors. The board of supervisors of the various counties may appoint a county superintendent of roads for a term of four years and fix his salary, but if they fail to do so, the state highway commission may make such appointment or place the county in a district with other counties and appoint a district superintendent. The district or county superintendent has charge of the highways under the regulations of the state highway commission. In the towns there is elected biennially a town superintendent of highways, but the town may after petition of the taxpayers vote to have the town superintendent appointed by the town board instead of elected. The town superintendent has, under the regulations of the state highway commission, the care and supervision of the highways of the town.

CLASSIFICATION OF HIGHWAYS.

The highways are divided into state highways, constructed and improved at the sole expense of the state; county highways, consisting of market roads which are improved at the joint expense of the state, county and town; town highways, constructed and maintained by the town with the aid of the state, and county roads constructed and maintained by the county, but toward the cost of maintenance of which the state has during the past year contributed about 50 per cent.

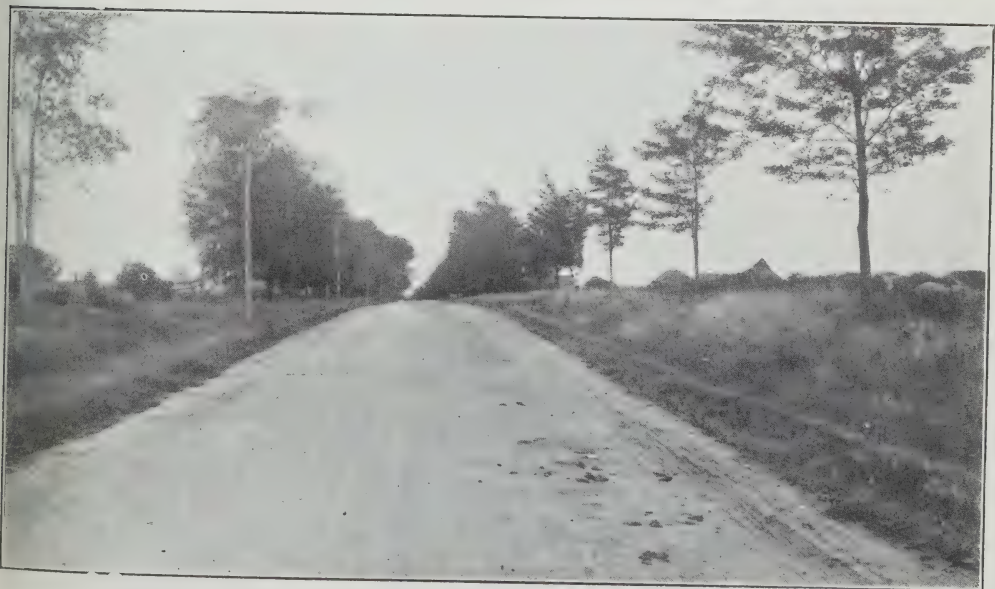
The system of state highways is set forth in the highway law of the state which described the routes to be followed. Such state highways are to be improved from funds derived from the sale of state bonds. The law provides that not more than one-half the amount appropriated each year from the proceeds of the bonds shall be expended in the construction and improvement of state highways. The county highways are improved upon application of the board of supervisors of the county to the state highway commission, requesting that a certain designated highway be improved as a county highway. If the commission approves, it directs the division engineer to make surveys, prepare plans and specifications, which are then sent to the district or county superintendent, who personally examines the highway and makes his recommendation. The commission then transmits plans, specifications, and estimates to the board of county supervisors for final approval after which the work is carried forward by the commission. The law provides that state and county highways shall be improved by contract. When a county board of supervisors makes application for the improvement of county highways, it shall at the same time appropriate an amount sufficient to pay the share of the cost to be built by the county and town. After final payment under a contract for improvement of a county highway the state highway commission prepares a statement of cost and files a duplicate with the county treasurer, who pays upon the requisition of the commission an amount as follows: two per cent. of the costs of highways for each one thousand dollars of assessed value of real and personal property in said county for each mile of public highway in such county.

The maintenance of state and county highways is under the direct control and supervision of the commission. The immediate work is performed by the town or district or county superintendent under the direction of the state superintendent of highways. Annual appropriations are made by the legislature for the maintenance of state and county highways and each town is required to pay for the maintenance of state and county highways each year \$50.00 for each mile of said highways within the town; incorporated villages 1½ cents for each square yard of surface maintained by the state within its corporate limits. Whenever any county has constructed or maintained a county road without expense to the state, the state shall annually contribute to the maintenance expenses of such road 50 per cent. of the amount appropriated by such county for the maintenance of the road during the preceding year.

The town superintendent prepares an annual statement showing the amount of money which should be raised by the town for the ensuing year for maintenance of its highways, such amount to be not less than an amount which, together with the aid to be given by the state, shall equal \$30.00 for each mile of highway within the town. After approval of estimates by the town board a copy is sent to the state highway commission. The state aids the towns in proportion to the taxes levied therein. If the assessed value is less than \$5,000 for each mile of highway in the town, outside of incorporated villages, the state pays an amount equal to the amount of the highway taxes levied therein. The state's proportion decreases from this point to the towns in which the valuation averages more than \$25,000 for each mile of highway, in which cases the amount paid by the state shall not exceed one-tenth of one per cent. of such assessed valuation, and in no case shall the amount paid by the state exceed an average of \$25.00 per mile for the total mileage of highways in the town outside of incorporated villages.



Patrolman's Wagon, carrying a flag. State of New York.



A New York State Broken-Stone Road.

STATE INDEBTEDNESS FOR HIGHWAYS AND OTHER PURPOSES.

The total debt of the state at the close of the fiscal year 1912 was \$109,702,660, against which should be credited a sinking fund of \$25,252,085.38 leaving the net state debt at \$84,450,574.62, and making an average net state indebtedness of \$9.26 per capita of the total population on the 1910 census basis, or an amount equal to .766 per cent. of the assessed valuation of property in the state.

The total state debt for road improvement at the close of the fiscal year 1912 was \$34,000,000, against which should be credited a sinking fund of \$4,285,715.76, leaving the net state debt for road improvement at \$29,714,284.24, which would be an average state indebtedness for road improvement of \$3.26 per capita on the basis of 1910 population figures. The ratio of state indebtedness for road improvement to total assessed valuation would be .270 per cent. The total amount of state bonds authorized for road improvement aggregates \$100,000,000—\$50,000,000 of which was authorized by the legislature of 1904, the bonds to run 50 years. One million dollars of bonds was issued December 1, 1906, bearing 3 per cent.; \$5,000,000 issued March 1, 1908; \$5,000,000 issued September 1, 1908; \$5,000,000 issued March 1, 1910; \$10,000,000 issued March 1, 1911, and \$8,000,000 issued March 1, 1912, the last five issues bearing 4 per cent. interest; the bonds to be retired by a sinking fund to consist of 2 per cent. per annum for 50 years. The second issue of \$50,000,000 was authorized by the legislature of 1912 and is to run for 50 years. Both of the bond issues were approved by the votes of the people. Further bond issues of the first \$50,000,000 authorized will bear 4½ per cent. interest in order to obtain par as required by law.

REVENUES AND EXPENDITURES.

The receipts to the general state fund for the year ending December 31, 1912, were \$50,036,406 made up as follows:

Direct taxes	\$6,326,823 13
Indirect taxes—	
Excise	9,412,363 84
Corporations	10,349,164 76
Organization of corporations	479,959 81
Inheritance tax	12,153,188 84
Stamp tax	3,653,037 24
Secured debt tax	1,411,567 60
Mortgages	1,852,324 45
Motor vehicles	1,053,762 25
Non-resident taxes	26,614 34
Sales of public lands	23,166 98
Fees, etc., public offices	499,344 63
Fines, fees, duties, etc.	380,355 22
Receipts from state institutions	860,806 77
Other receipts	1,560,926 19
Total	\$50,036,406 08

Among the large items of expenditure by the state government were the following—(approximate amounts).

Educational purposes	\$9,500,000 00
State hospitals, etc.	8,600,000 00
Legislative	1,900,000 00
Advancement of agriculture	2,630,000 00
Regulative	2,500,000 00
Penal	2,250,000 00
Protective	3,000,000 00
Constructive work	4,475,000 00
Judicial	1,830,000 00
Administrative	1,225,000 00
Contribution to interest and sinking fund	4,157,000 00

Of the taxable valuation the city property comprises 85 per cent. and other property 15 per cent. In addition to the direct state taxes, \$237,733,486 was levied for town, county and special purposes, or a total of all direct taxes of \$243,086,252. This total property tax pro-rated on the total assessed valuation shows the rate to be about 22 mills on the dollar. The average per capita expenses of conducting the state government is about \$5.49, and of this amount about 12 per cent. or .66 per capita was paid in the form of direct property tax. Greater New York pays about 60 per cent. of all taxes within the state.

HIGHWAY CONSTRUCTION AND MAINTENANCE.

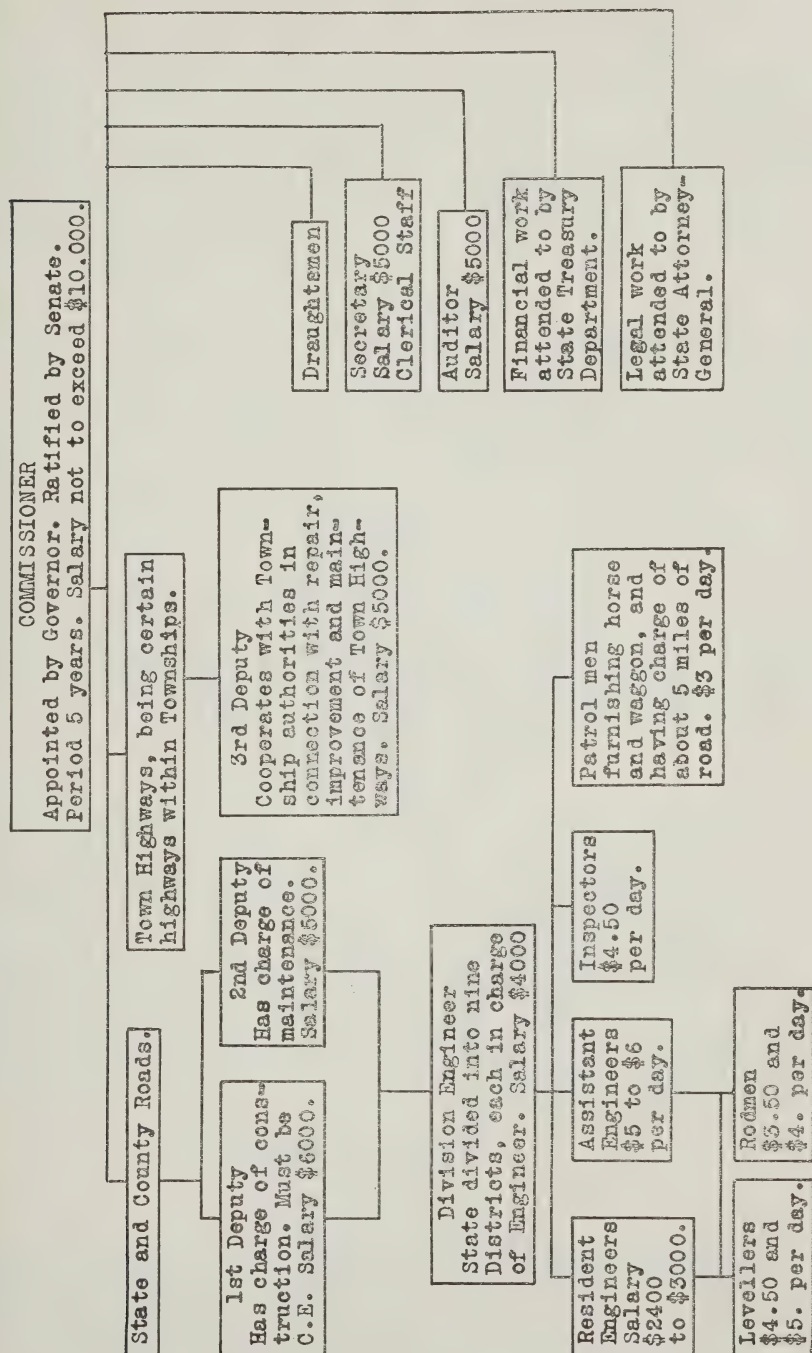
On January 1st, 1913, there had been improved 3,578 miles of state and county highways; 1,627 miles were under contract and 298 miles were expedited routes provided for in the expediting bills of 1910-11, leaving 6,483 miles of state and county highways to be improved, thus making up the total of 11,997 miles in the contemplated system of state and county highways. The system of state highways provided for by the legislation comprises 3,617 miles, and the county highways 8,380 miles. This system of state highways was provided for by a law passed in 1907 which directed the state engineer to prepare a map showing a comprehensive system of highways to be improved throughout the state. The routes were definitely located by the state engineer and approved by the county board of supervisors and a map was then prepared and submitted to the legislature, which in 1908 adopted the system. It was found as the work went along that the construction under the original plan, resulted in disjointed, uncorrelated sections of road; a law was therefore passed in 1910 which provided for expediting the route between Albany and Buffalo and this was followed by legislation in 1911 which provided for the speedy completion of 1,464 miles of trunk line highways. The average cost per mile of the first 1,050 miles of state highways was stated by Mr. C. Gordon Reel, former State Superintendent of Highways, to have been \$11,452. and the average cost of the next 1,848 miles of highways was \$12,236 per mile. These costs are further verified by a report to the Joint Congressional Committee on Federal Aid in the Construction of Post Roads in which the New York State Highway Department gave the cost of water bound macadam under typical and average conditions as about \$12,000 per mile and macadam with asphalt grout at about \$13,700 per mile.

On January 1, 1913, the state highway department reported 3,578 miles of town highways macadamized; 8,500 miles improved as gravel roads, and 50,000 miles shaped, crowned, and standardized as to width. Considering only the hard surfaced roads, including gravel, as improved roads, the report would indicate the total mileage of improved roads as 15,666 or about 19.06 per cent. of the total of all roads, both improved and unimproved, which is approximately 80,000 miles.

The Bureau of Maintenance reported that it had during 1912 re-surfaced, repaired and oiled 1,215 miles of highways, at a total outlay for sweeping, oiling, material for cover, guard rail, concrete, tools and plant, extraordinary repairs and miscellaneous, exclusive of patrol, of \$2,350,810 which would indicate an average outlay per mile of over \$1,900.00. The United States Office of Public Roads gives the cost of maintenance on New York State and County Highways in 1912 as an average of \$1,009.00 per mile.

The Bureau of Town Highways reported during the year 1912 that \$1,665,000 was expended as state aid to town highways, which, combined with the local highway tax, made a total amount available of approximately \$7,252,000. This would give an average amount per mile per annum for town highways of something over \$97, of which the state contributed over \$21.

NEW YORK STATE HIGHWAY ORGANIZATION.



ORGANIZATION OF STATE HIGHWAY DEPARTMENT.

The state highway commissioner is appointed by the governor, with the consent of the Senate for a term of five years at a salary of not to exceed \$10,000 per annum. He appoints a secretary, an auditor and three deputy commissioners; the first deputy has charge of plans, specifications, and the execution of all contracts awarded by the department; the second deputy has charge of the maintenance of state and county highways, and the third deputy's duty relates to the improvement and maintenance of town highways and bridges. The secretary has charge of clerical and administrative work; the auditor has charge of financial work in conjunction with the state treasury department, and the legal work of an advisory character is done by the state attorney-general. The state is divided into not more than nine divisions, each in charge of a division engineer, who has charge of the construction and maintenance in his division and consequently reports to the first and second deputies. Under the division engineer are resident engineers, assistant engineers, inspectors and patrolmen. The county superintendents, who are appointed by the boards of supervisors of the respective counties, or, upon their failure to appoint, are appointed by the state highway commission, and the district superintendents, who are appointed by the state highway commission in lieu of the county superintendents and have charge of districts made up of more than one county, are under the direction of the commission. The town superintendents of highways are also subject to the regulations of the state highway commission and are required to report annually to the county or district superintendents. This organization gives to the state highway commission some measure of control over practically the entire mileage of roads in the state and, therefore the most highly centralized of any state highway system now in effect.

MOTOR VEHICLE LEGISLATION.

The law provides that the registration fees are in lieu of all taxes to which motor vehicles may be subject. The fees for registration are as follows: five dollars for 25 horse-power or less; ten dollars for more than 25 horse-power and less than 35 horse-power; fifteen dollars for 35 horse-power or less than 50 horse-power; twenty-five dollars for 50 horse-power or more.

If a motor vehicle is originally registered after August 1st in any year the registered fee for that year is half of the fee provided for. The law provides that all moneys received under the motor vehicle law shall be appropriated for the maintenance and repair of the improved roads of the state under the direction of the state commission of highways.

III. PENNSYLVANIA.

GENERAL INFORMATION.

The state has a land area of 44,832 square miles of which 29,033 square miles consist of farm land. The population in 1910 was 7,665,111 of which 60.4 per cent. was urban and 39.6 per cent. or 3,034,442 was rural, thus giving an average rural population per square mile of farm land of 104.5. The average population per square mile of land area was 171. In 1910 there were 263 municipalities having a population of 2,500 inhabitants or more. There are about 95,000 miles of road in the state thus giving about 2.12 miles of road per square mile of land

area. The population per mile of road on the basis of 1910 census was 80, and the rural population per mile of road was about 32, and 3.26 miles of road per square mile of farm area.

The assessed value of all property in 1912 was \$5,917,119,205; this valuation is probably considerably under actual value but no ratio between assessed and actual value is obtainable. This valuation would give an average assessed value per square mile of land area of about \$132,000, and an average assessed value per mile of road of about \$62,000. The average value of farm land per acre in 1910 was \$33.92, an increase of \$4.22 per acre, thus making an increase in the value of 18,586,000 acres of \$78,433,000 during the ten year period.

POLITICAL ORGANIZATION.

There are 67 counties in the state, for each of which the governing body is a board of three county commissioners elected by the people and holding office three years. The county commissioners are authorized to levy a tax not to exceed 2 mills on the dollar upon all property to improve important county roads. The counties are divided into townships in each of which the governing body is a board of three township supervisors. One member of the board is elected annually. The township board is authorized to levy a road tax not to exceed 10 mills on the dollar for road purposes. In most of the counties of the state the township is the local unit for road work.

CLASSIFICATION OF HIGHWAYS.

The main travelled routes between county and city and the main travelled routes leading to the state line and between the principal cities, boroughs and townships are declared by law to constitute a system of state highways, to be constructed and maintained at the sole expense of the Commonwealth. This system has a total length of about 9,000 miles and comprises 296 routes. In addition to the state highways the state grants aid to counties and townships for the improvement of roads not included in the system of state highways. For these state aid roads the state pays 50 per cent. of the cost of improvement and subsequent maintenance, and the county and township, if they make joint application for such improvement, each pay 25 per cent. of the cost of improvement and the township pays 50 per cent. of the entire maintenance. When a county or township alone applies for aid, the county or township making the application pays 50 per cent. of the cost of improvement and 50 per cent. of the cost of the subsequent maintenance. The state aid is apportioned among the several counties in accordance with the mileage of county and township roads in the counties. The maintenance of such roads is under the direct control of the state highway department which collects back from the local subdivisions the 50 per cent. which they are required to pay. The remainder of the roads are county or township roads and are constructed and maintained by these respective units.

STATE INDEBTEDNESS.

On December 1, 1911, the interest-bearing debt of the state was as follows:

3½ per cent. bonds due Feb. 1, 1912	\$532,250 00
4 per cent. bonds due Feb. 1, 1912	1,112,150 00
6 per cent. Agricultural Transcript-bonds	500,000 00
6 per cent. proceeds from sale of experimental farms	17,000 00
Total	\$2,161,400 00
Non-interest-bearing debts and debts on which interest has ceased..	134,110 02
Total debt	\$2,295,510 02
Credit by sinking fund assets	2,396,683 22
Net surplus in fund	\$101,173 20

Pennsylvania practically has no debt, as its sinking fund exceeds its liability. An amendment to the constitution authorizing a \$50,000,000 state bond issue for the construction of state highways was defeated at the last election.

REVENUES AND EXPENDITURES.

The receipts for the general fund of the state from all sources for the year ending November 30, 1911, were \$32,100,591.40 and the disbursements \$29,042,086.37.

The principal sources of revenue for the state government are as follows:

Tax on capital stock of corporations	\$11,519,000 00
Tax on collateral inheritance	1,587,000 00
Tax on corporate gross receipts	1,647,000 00
Tax on corporate loans	2,079,000 00
Tax on foreign fire insurance companies	1,475,000 00
Tax on personal property	4,746,000 00
Tax on bank stock	1,045,000 00
Retail liquor licenses	648,000 00
Wholesale liquor licenses	750,000 00
Automobile licenses	428,000 00
Brewers' licenses	322,000 00
Wholesale mercantile licenses	315,000 00

The principal items of expenditure were as follows:

Public school appropriations paid to counties	\$5,689,000 00
State tax on personal property returned to counties	3,559,000 00
Hospitals, miscellaneous	2,986,000 00
Hospitals for insane	1,907,000 00
Department of Health	1,540,000 00
Commonwealth's portion of road tax paid townships that abolish work tax	1,180,000 00
Judiciary	1,124,000 00
Commissions, miscellaneous	806,000 00
Highway construction	700,000 00
Institutions	858,000 00
Training schools	869,000 00

The gross tax on personal property levied by the state was at the rate of 4 mills on the dollar. The valuation was \$1,199,000,000.00 and the total amount derived was \$4,795,000, three-fourths of which was returned to the counties from which it was derived.

ROAD CONSTRUCTION AND MAINTENANCE.

State participation in road building was inaugurated by an Act of the General Assembly approved April 20, 1903, which provided for a state highway department in charge of a state highway commission. Between June 1, 1903 and May 31, 1911, the total amount appropriated for reconstruction work by the department was \$9,500,000. Of this amount 90 per cent. was apportioned to the counties of the state in proportion to mileage of township roads; the remaining 10 per cent. was distributed as a maintenance fund to the townships and counties having improved roads. Of the roads constructed under the state aid law the state paid 75 per cent. of the cost and the counties and townships the remaining 25 per cent. The length of the road reconstructed under this act was about 850 miles, the total cost of which was about \$9,000,000 or \$10,588 per mile, of which engineering and

inspection amounted to 1.95 per cent. and 2.87 per cent. respectively. The state also contributed to the cost of maintenance exceeding 75 per cent. of the average annual cost, for something over 2,000 miles of road. The law was amended in 1909 so as to give the highway department oversight of approximately 88,000 miles of unimproved roads by requiring the township officials to make annual reports to the department, and by allowing to each township maintaining the cash road tax system an allotment from the state equal to 50 per cent. of the amount of road tax collected in the township provided that no township should receive more than \$20 annually for each mile of township road. In 1911 a law was enacted providing for a state highway system having a total length of 8,798 miles and connecting the counties and the important cities of the state. The system of state highways was to be improved and maintained entirely at the cost of the state. The state aid provisions for other roads remained practically unchanged. An appropriation of \$3,000,000 was made for the construction and repair of the state highway system and for the payment of the state's share of the maintenance of state highways. An additional \$1,000,000 was appropriated to be applied to the improvement of state aid highways. The mileage and cost of state highways from June 1, 1911, to October 30, 1913, is given as follows:

	Length, miles	Total cost	Average cost per mile
		\$ c.	\$ c.
Water bound macadam	86.23	717,404 95	8,319 66
Ashphaltic macadam	48.79	759,820 86	15,573 27
Ashphaltic concrete	41.17	885,698 42	21,513 19
Brick	8.94	232,477 12	26,004 15
Cement concrete	2.71	50,718 62	18,715 35

The mileage and cost of state aid highways from June 1, 1911 to October 30, 1913 are as follows:

	Length, miles	Total cost	Average cost per mile
Water bound macadam or telford.....	16.07	\$147,019 37	\$9,147
Ashphaltic macadam	46.42	777,122 35	16,763
Asphaltic concrete	8.90	204,767 76	23,007
Brick	20.36	478,704 62	23,512
Cement concrete .....	.45	7,404 00	16,453

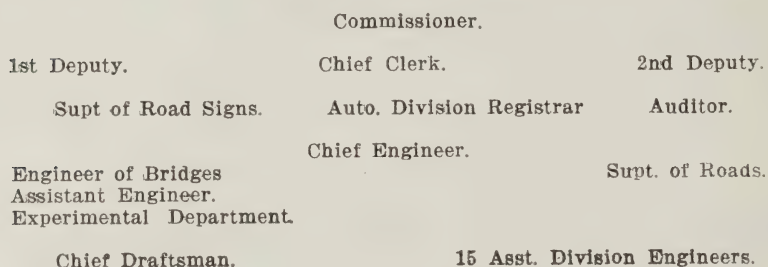
The state highway department reports a total of about 95,000 miles of road in the state and that previous to June, 1911, 822 miles of state highways had been improved and from June, 1911 to October 30, 1913, 186.8 miles had been improved, making a total on the latter date of 1,008.8 miles of improved state highway.

From the foregoing it appears that while the water bound macadam roads formed the largest percentage of state highway construction in the early stages of the work, they have been very largely supplanted during the past few years by asphaltic macadam and to a more limited extent by brick and asphaltic concrete. The cement concrete type does not appear to have been employed to any considerable extent by the state highway department. Maintenance costs do not appear to be available.

ORGANIZATION OF STATE HIGHWAY DEPARTMENT.

The state highway commissioner, who receives a salary of \$8,000 per annum is appointed by the governor. A first deputy state highway commissioner at \$6,000, a second deputy state highway commissioner at \$6,000, a chief engineer at \$7,000, and an auditor at \$3,000, are also appointed by the governor. The law also provides for the appointment by the state highway commissioner of an engineer of bridges at \$3,600; fifty superintendents of highways at \$1,500 each, a chief draftsman at \$2,400 and a chief clerk at \$2,400. The state highway commissioner may also appoint as the work may require fifteen assistant engineers at \$2,400 each, four assistant draftsmen at \$1,800 each, two book-keepers at \$1,600 each, four stenographers at \$1,200 each and additional clerical and stenographic assistants at not more than \$1,000 each as may be required.

The following diagram illustrates the organization of the department:



IV. OHIO.

GENERAL INFORMATION.

The state has a land area of 40,740 square miles of which 37,648 square miles or 92.4 per cent. comprised farm land in 1910. The population in 1910 was 4,767,121 of which 55.9 per cent. was urban and 44.1 per cent. or 2,101,978 was rural. The average population per square mile of land area in 1910 was 117 and the average rural population per square mile of farm area was 55.8. There were 138 municipalities having a population of 2,500 inhabitants or more in 1910. The total mileage of all roads in the state is 88,861 or 2.18 miles per square mile of land area and 2.36 miles of road per square mile of farm area. The total population per mile of road in 1910 was 52.64 and the rural population per mile of road in 1910 was 23.65. The average value per farm of farm property in 1910 was \$6,994, the average size of farms 88.6 acres, and the total number of farms 272,045. There was an increase in value per acre of farm land from 1900 to 1910 of \$19.99, which, applied to the 24,105,000 acres, means an increase of about \$480,000,000 in value in farm land during the ten years period. The assessed value of all property in 1912 was \$6,481,000,000, which is subdivided as follows:

Real Estate in cities and villages	\$2,599,395,531—40.1%
Farm lands	1,736,249,999—26.7%
Public utilities	1,171,395,860—18.0%
Banks	175,966,466—2.7%
Personal property	798,037,331—12.5%

The ratio of assessed to actual value was 100 per cent. This would give a value per square mile of land area of about \$159,000, a value per mile of road of about \$71,225, and a value per capita of about \$1,362.

POLITICAL ORGANIZATION.

The state is divided into 8 counties, in each of which the governing body is a board of three county commissioners, who are elected by the people for two years. The board has charge of county roads and under their control is a county surveyor who has direct charge of actual work on county roads. The counties are divided into townships in which the governing body is a board of township trustees consisting of three members elected in November of odd years. Township roads are under control of the Board of Trustees.

CLASSIFICATION OF HIGHWAYS.

The highways may be classed as main market roads, the routes for which are specified in an Act approved April 15th, 1913; inter-county roads provided for in an Act approved June 9, 1911; county roads, and township roads. The Act providing for the main market roads calls for an annual tax levy of one-half mill on all taxable property in the state, 75 per cent. of the money from this levy is to be applied to the maintenance of the state highway department and for the construction and maintenance of the inter-county system of highways and 25 per cent. for the construction and maintenance of the main market roads. On the basis of 1912 assessed valuations the levy would produce \$3,405,000 of which \$2,405,00 is to be expended as state aid on the inter-county highways, to which the county and townships must add an equal amount making a total of \$4,810,000. For the inter-county highways the counties are required to contribute 25 per cent. of the cost and the townships 25 per cent. of the cost. The remaining 25 per cent. of the levy amounting to \$851,000 is to be expended on the main market roads for which no local contribution is required. The law also provides for supplying state convicts to the state highway department for work on the highways as may be desirable.

STATE INDEBTEDNESS.

The state has no state indebtedness. An amendment to the constitution authorizing the state to borrow money for constructing highways was defeated at an election held in 1912.

HIGHWAY CONSTRUCTION AND MAINTENANCE.

The state highway department was established in 1904. The total mileage of improved state roads constructed with the aid of the state funds from the establishment of the department to November 15, 1912, was 247.82 miles. As indicating

the cost of types of road the following table shows contracts completed from November 15, 1911 to November 15th, 1912:

Type	Total mileage	Total cost	Average cost per mile
Brick	19.96	\$292,459 37	\$14,652 22
Concrete	2.38	18,365 00	7,716 34
Bituminated concrete	1.61	12,285 00	7,630 42
Concrete and macadam	3.10	21,725 00	7,008 06
Waterbound macadam	39.77	237,640 49	5,975 12
Bituminous macadam	9.68	66,338 61	6,842 82
Gravel macadam	3.46	11,069 00	3,199 13
Totals	79.96	\$659,882 47	.....

The inter-county and main market roads are constructed under the supervision of the state highway commissioner, who is also required to give advice to local authorities and to do educational and investigating work. The inter-county highway system was designated in accordance with an investigation conducted by the state highway commissioner under an Act of the Legislature directing him to designate by name and number the main roads of the state so as to form a continuous and connected highway system. The inter-county highways are improved upon application by the county commissioners to the state highway commissioner and approved by him. He causes plans and specifications to be made, advertises for bids, and, with the approval of the county commissioners, awards contracts. As already stated the cost of county highways is met as follows: 50 per cent. by the state; 25 per cent. by the county and 25 per cent. by the township. The main market roads are to be constructed and maintained entirely at the expense of the state. The maintenance of inter-county highways is under the immediate control of the state highway commissioner and the cost is apportioned on the same basis as the construction cost. The state's share of the maintenance funds is provided by annual appropriation and the county's and township's shares from their respective road or road repair funds.

A revision of the state highway law was provided by an Act passed April 19, 1913. So far as the inter-county highways are concerned the new law has extended to townships the same right to make application for state aid in the construction or maintenance of inter-county highways as was given to county commissioners under the old Act. The county and township authorities are allowed to proceed with the improvement of any portion of the inter-county highway system without state aid, provided that they first submit plans and specifications to the state highway commissioner. The county commissioners may waive the portion of cost to be paid by the township or abutting property owners and assume any part or all of the cost of such highway improvement in excess of the amount received from the state that they so desire. The township may likewise waive any part of the portion of the cost to be paid by the county for abutting property owners and assume any part or all of the cost in excess of the amount received from the state. The county commissioners are authorized to levy a tax of not exceeding one mill for the purpose of providing funds for the construction and maintenance of highways under this Act. Townships are also authorized to levy a tax of not exceeding three mills for the purpose of providing funds for the construction of highways under this Act. The new law provides that the state highway commissioner shall maintain all inter-

county highways, main market roads, bridges, and culverts, constructed by the state, or by the aid of state money, or taken over by the state, and the state may pay the entire cost thereof, but nothing in the act to be construed to prohibit counties, townships, municipalities, the Federal Government, or private parties contributing any portion of the maintenance cost. This would indicate that it is discretionary with the state highway commissioner as to whether the counties and townships shall pay half the maintenance cost of inter-county highways.

ORGANIZATION OF STATE HIGHWAY DEPARTMENT.

The Act, approved April 19, 1913, provides that the Governor shall, with the advice and consent of the Senate, appoint a state highway commissioner at a salary of \$4,000 per annum, to serve for a term of four years. The commissioner is required to be a civil engineer and experienced in road construction. The state highway department is divided into three bureaus, known as Bureau of Construction, Bureau of Maintenance and Repair, and Bureau of Bridges. The Commissioner, with the approval of the Governor, appoints three deputy highway commissioners, not more than one of whom shall be of the same political party as himself, and all whom shall be competent civil engineers. Each of these deputies is in charge of a bureau and each receive \$3,000 per annum. The commissioner may also appoint four division engineers in the Bureau of Construction, two in the Bureau of Maintenance and Repair, and two in the Bureau of Bridges, and such additional division engineers as may be necessary from time to time. The division engineers shall receive not more than \$2,500 per annum. He may also appoint a chief clerk at not more than \$2,000 per annum and a secretary at a salary not to exceed \$2,000 per annum. He may also employ such other assistants as may be required.

V. MICHIGAN.

GENERAL INFORMATION.

The state has a land area of 57,480 square miles. The land in farms in 1910 comprised 29,612 square miles. The population in 1910 was 2,810,173, of which 47.2 per cent. was urban and 52.8 per cent. or 1,483,129 was rural. There were 79 municipalities having a population of 2,500 inhabitants or more in 1910. The assessed value of all taxable property in the state for the year 1912 was \$2,288,000,000, or an average value per square mile of land area of about \$39,800 and an average per capita of \$814. It is claimed that the assessment represents about two-thirds the valuation. Consequently the actual wealth of the state is over \$1,200 per capita. There are approximately 70,000 miles of road in the state. The average assessed value of property per mile of road would be about \$32,700 and the actual value per mile of road would be about \$49,000. The mileage of roads is about 1.22 per square mile of land area, or, relatively speaking, about half the mileage of the state of New York. This is due largely to the fact that the state of Michigan is divided into two parts, commonly known as the upper peninsula and the lower peninsula. The upper peninsula is to a great extent an undeveloped territory and the principal industry is mining. The lower peninsula is an important agricultural region, and consequently has a much higher ratio of roads per square mile of land area than the upper peninsula.

POLITICAL ORGANIZATION.

There are 83 counties in the state, the governing body consisting of a board of supervisors, one supervisor from each organized township, elected by the people. Under the present highway laws, the work of highway improvement is carried on by townships, by good roads districts and by counties. Under the township system the highway work of a township is in charge of a township highway commissioner acting under the supervision of the township board. Road districts may be formed by any combination of townships, villages or cities forming a continuous area in any county. Road work in these districts is in charge of a body known as a board of good roads commissioners, consisting of one member from each township, incorporated village or city included in the district. Under the county system the work is in charge of a board of county road commissioners, not exceeding five in number. Whether or not a county shall operate under the county system is decided by the townships included in the county, a petition from not less than ten per cent. of the resident freeholders in each of the several organized townships, villages and cities of the county being required to bring the matter up for consideration and a majority vote in favor of the adoption of the county system being necessary to carry the measure. In counties where the system is in operation all roads in townships, except county roads, are under the care and supervision of the township boards and the highway commissioner, as in cases where the county system does not prevail. In the event that a county, in which road districts have been formed, subsequently adopts the county system, the road districts are automatically dissolved except for the completion of work under contract, and the funds of the district are paid back to the units composing it. Townships which have adopted the township road plan, as provided for by the law of 1895, and which have carried on work under that plan may continue under it until such time as the township votes to abolish it, and while working under the township system the town is not liable to any tax for the county road system without its consent, provided that the county in which the township is situated adopted the county system previous to 1913.

CLASSIFICATION OF HIGHWAYS.

The public highways of the state may be classed as trunk line state reward highways, state reward highways, county highways and township highways. The first class receives aid from the state in the form of reward; the second class receives reward in half the amount paid to the first class; the third class is maintained and improved by the county without state reward; and the fourth class is maintained and improved by the township without aid from the state or county. The state grants rewards to local roads which have been completed in accordance with specifications of the state highway department and have been accepted by it. The state reward roads are composed of seven classes, known as classes A to G inclusive. Class A consists of sand clay roads or equivalent, for which the reward is \$250 per mile, the amount increasing \$25 for each additional foot in excess of 9 feet and up to 16 feet; Class B consists of gravel or equivalent, for which the reward is \$500 per mile with an extra \$50 per mile for each additional foot to 16 feet; Class C consists of two course roads of crushed stone or gravel or its equivalent, for which the reward is \$750 per mile and an extra \$75 for each additional foot in width; Class D consists of two course roads with a surface of crushed stone not less than 3 inches compacted, for which the reward is \$750 per mile and an additional \$75

for each additional foot of width; Class E consists of waterbound or bituminous macadam laid in courses and not less than 6 inches thick, for which the reward is \$1,000 per mile with an additional \$100 for each foot of width; Class F comprises Portland cement concrete roads with or without paving brick surface, for which the reward is \$1,000 per mile with an additional \$100 per mile for each additional foot of width; Class G comprises brick roads with curbs, for which the reward is \$1,000 per mile with an extra \$100 per mile for each additional foot of width. The trunk line reward roads receive double state reward and the routes are specified in the trunk line highway act.

REVENUES AND EXPENDITURES.

The total receipts of the state treasurer for the fiscal year ending June 30, 1913, were \$13,434,472.52. Of this amount \$7,513,321.45 constituted the general fund of the state, and \$5,903,524.96 the specific tax fund made up of taxes on corporations and applied principally to primary school fund. The receipts to the general fund were made up principally of property taxes through county treasurers, \$5,856,961.35; mortgage tax receipts, \$185,391.85; state prison revolving fund, \$328,886.58; inheritance license, \$25,228.55. The disbursements from the general fund were \$7,463,179.04, made up principally of the following: University of Michigan, \$1,055,500; state highway department, \$347,275.96; support of insane at six state hospitals, \$1,212,950.26; state prison revolving fund, \$329,297.38; legislature, \$173,298.22; salaries of state officers, \$574,709.26; soldiers' home, \$200,000; agricultural college, \$219,800; normal schools, \$385,000; state prison, \$187,766.77. The railroad taxes paid during the year \$4,150,190.84, the largest taxpayer among the railroads being the Michigan Central, which paid \$702,077. The express companies paid \$35,827; the sleeping car companies, \$12,481; the freight, refrigerator and car loaning companies, \$277,580; the fire insurance companies, \$274,000; the telephone companies, \$589,202; in addition to these taxes were paid by a number of other companies.

The expense of running the state government, excluding the amounts collected from corporations and applied to primary school fund amounted during the last fiscal year to about \$2.70 per capita upon the 1910 population basis.

The state does not appear to have any general indebtedness; the total property tax levied in the counties for 1912 was \$39,315,699.16, made up as follows:

State tax	\$6,523,013 22
County tax	4,717,880 81
Township tax	1,191,002 69
School tax	8,532,423 35
Highway tax	3,471,432 39
County road tax	815,227 24
Drain tax	216,059 66
City tax	12,344,155 80
Village tax	1,490,847 76
Rejected tax	13,656 24
Total	\$39,315,699 16

This would make the average tax rate on property for all purposes of about \$0.017. The railroads paid taxes amounting to \$4,372,144.50.

The recent trunk line highway act directed the auditor general to incorporate in the state tax for 1913, \$200,000 and for 1914, \$300,000 to reimburse the general fund for the appropriations made for trunk line highways.

HIGHWAY CONSTRUCTION AND MAINTENANCE.

On January 1st, 1913, there had been completed with the aid of the state funds 1,754.27 miles, on which the state paid in the form of rewards \$1,164,392. The State Highway Department reports that the gravel roads of the state cost on an average \$2,100 per mile and receive a reward of \$500 from the state. The macadam roads cost about \$4,300 per mile and receive \$1,000 reward from the state. The concrete roads cost about \$10,000 and receive \$1,000 reward. The combination of crushed stone and gravel road costs \$3,750 per mile and receives \$750 reward. The clay gravel roads cost about \$1,500 per mile and receive \$250 per mile reward. The average reward paid by the state on the total mileage of state rewards roads constructed is about \$664. In addition to rewards, the last legislature appropriated \$50,000 as a deficiency appropriation, \$450,000 for the state reward fund for the ensuing year for which \$18,000 was for departmental expenses, \$200,000 for the state trunk line fund for the fiscal year 1913, and \$300,000 for the state trunk line fund for the fiscal year 1914. Besides these amounts the department has, beginning January 1, 1914, received the funds from automobile licenses, which are expected to provide \$750,000 during 1914.

The trunk line highway system, referred to under "Classification of Highways" consists of about 3,000 miles of road. The state highway commissioner calls attention to the fact that for the most part Michigan is still building gravel and macadam roads, although a number of miles of concrete roadways have been built in the state, mostly in Wayne County. He contends that the cheaper types of road are entirely adequate to meet the demands of traffic except in the vicinity of the cities, and that to build more expensive types of road would be folly.

As an indication of the outlay for road work in Michigan, it may be stated that in 1912 the state highway commissioner estimates the total expenditure at \$4,750,000, and that for 1913 it was very nearly \$5,000,000 or about \$71.50 per mile. It is estimated by the state highway commissioner that there are in the state about 2,000 miles of improved high roads in addition to the 1,754 miles constructed as state reward roads. This would make the total mileage of improved roads in the state about 5 1-3 per cent.

ORGANIZATION OF STATE HIGHWAY DEPARTMENT.

The state highway commissioner is elected by the people and is required to provide rules and regulations in accordance with which roads must be constructed in order to receive state rewards. The state highway department has no direct part in the construction of roads. The department is also charged with the giving of instruction in the improvement of roads and bridges, the collection of data, and the distribution of the state reward funds. Under the recent trunk line highway act, the state highway department is required to design all bridges and culverts and construct all bridges of a greater span than 30 feet on state reward trunk line highways. The state highway commissioner has as his assistants two deputies and under them such employees as are necessary.

VI. MINNESOTA.

GENERAL INFORMATION.

The state has a land area of 80,858 square miles. The land in farms comprises 43,280 square miles, or 53.5 per cent. of the total area. The population in 1910 was 2,075,708, of which 41 per cent. was urban and 59 per cent. or 1,225,414 rural, thus giving an average population per square mile of land area of 25.7 and a rural population per square mile of farm land of 28.3. There were 48 municipalities having a population of 2,500 inhabitants or more in 1910. The total mileage of all roads in the state was 79,323 or .981 miles of road per square mile of land area, the state of New York and Massachusetts having nearly two and a half times the miles of road per square mile of land area. The total population per mile of road in 1910 was 26.17, and the rural population per mile of road 15.45. The assessment made in 1911 for 1912 gave the value of land and structures at \$664,930,374; the value of city property \$370,595,899; the value of taxable personal property \$177,041,521, and the value of taxable personal property under a special classification provided by chap. 289 of 1911 laws, \$115,676,126, making a total of \$1,328,243,920. This valuation is considerably under the actual value. The average assessed value of land per acre under the 1911 assessment shows \$15.45, whereas the census gives the average value in 1910 as \$36.82. It would, therefore, seem fair to suppose that the actual value of property in Minnesota is more than double the assessed value. On this basis, the assessed value per square mile of land area would be \$15,500, the assessed value of mile of road, \$16,800; the wealth per capita would on assessed valuation be \$640. Farm land increased in value from 1900 to 1910 on an average of \$15.51 per acre according to census reports. This amount pro-rated over the 27,675,000 acres would show a gain in value of over \$429,000,000.

POLITICAL ORGANIZATION.

The state is divided into 86 counties, in each of which the governing body is a board of five county commissioners elected by the people for a term of four years. The board of commissioners has control over the county roads. The counties are further divided into towns, in each of which the governing body is a board of three supervisors, elected for a term of one year. The board of supervisors has control over township roads. The county boards have authority to designate established roads in the county as State roads. If the cost of improvement is over \$500 the board has an assistant state engineer prepare surveys, plans and specifications, which are submitted to the state highway engineer. If he approves the same the county board proceeds to do the work of improvement under the supervision of an assistant state engineer, who acts under the direction of the state highway engineer.

CLASSIFICATION OF HIGHWAYS.

The roads of the state are classified as state roads, county roads, and town roads. The state roads at the close of 1911 comprised 12,688 miles. These roads, as has already been explained, are designated in the first instance by county boards. The state roads have generally been located to suit the convenience of farm com-

munities, but the state highway department is preparing to unite these various highways into a trunk line system under Chap. 254 of the General Laws of 1911. Half of the cost of improving state highways is paid by the state. Minnesota appears to have no state debt.

REVENUES AND EXPENDITURES.

The state tax levy for the fiscal year 1912 was 1.7 mills, the maximum allowed by law being 1.9 mills. At the general election held in November, 1912, an increased tax on railroad property was authorized. The tax was formerly 4 per cent. and was increased to 5 per cent., the additional 1 per cent. producing about \$1,000,000. The total revenues of the state prison twine plant, the drainage commission, and half the expenditures of the university and agricultural college, amounting in all to about \$2,275,000, were paid from funds other than state revenue. The principal sources of revenue were as follows for 1912:

State tax levy.....	\$1,856,494 03
Railroad tax	3,738,701 28
Freight line taxes	4,131 10
Insurance taxes	413,259 75
Telegraph taxes	36,450 00
Express company taxes	63,856 11
Telephone taxes	166,515 30
Sleeping car taxes	10,273 86
Inheritance taxes	678,512 99
Inebriate hospital taxes	47,842 97
Vessel tonnage taxes	15,074 92
Insurance department fees	71,780 50
Incorporation fees	94,525 00
Oil inspection fees	63,354 35
Interest on bank balances.....	44,344 00
Motor vehicle licenses	60,168 00
Banking department fees	25,890 00
Game and fish commission.....	23,973 12
Hunters' licenses	25,158 20
States institutions' earnings	537,031 84
Miscellaneous.....	275,458 98
Total.....	\$8,242,796 54

At the general election, November 5, 1912, a state tax of not to exceed one mill was adopted for the purpose of providing a state road and bridge fund. This levy produces about \$1,250,000. The total levy on the part of the state is made up as follows:

Revenue fund	1.9 mills
Soldiers' relief fund .....	.1 "
State road and bridge fund.....	1.0 "
University campus fund .....	.15 "
Total	3.15 "
General School Fund	1.0 "
General university school fund.....	.23 "
Grand total	4.38 "

As the expenditures are about equal to the receipts it follows that the per capita expense for conducting the state government is about \$4.00.

HIGHWAY CONSTRUCTION AND MAINTENANCE.

At the close of 1911 the results accomplished on state roads were as follows: Roadbed improved and graded, 1,085.7 miles; roadbed gravelled, 409.6 miles; road macadamized, 49.4 miles; sand clay road, 20.8 miles; total number of bridges, 122; total number of metal and concrete culverts, 17,081 linear feet.

The allotment for 1911 on state roads was \$79,300 which, added to the total previous allotment, would make a total allotment by the state to the close of 1911 of \$360,240.

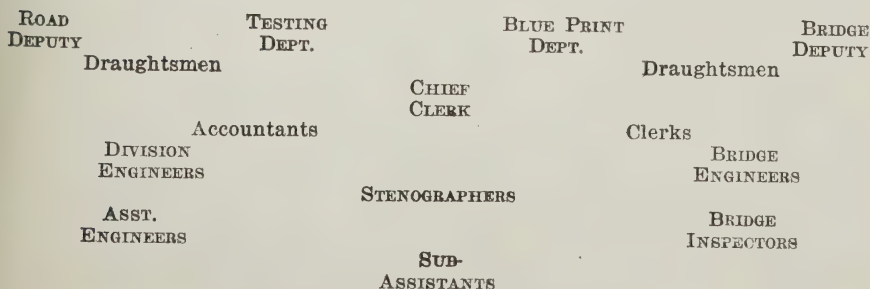
As to the cost of road construction it may be stated that a report to the Joint Congressional Committee on Federal Aid in the Construction of Post Roads made in January, 1913, by the state highway commissioner, gives the cost of a typical macadam road with six inches of compacted material and nine feet width of metal surface at \$4,325. A 16-foot road at the same rate would, therefore, be in the neighborhood of \$7,000. He gave the cost of the gravel road with the same dimensions at \$2,815 a mile, and of a concrete road 16 feet wide at \$11,910 a mile. No definite maintenance figures are at hand.

ORGANIZATION OF STATE HIGHWAY DEPARTMENT.

The state highway commission consists of three members appointed by the Governor and holding office for three years, one new commissioner to be appointed each year. The commission appoints a secretary, who is also state engineer, who holds office at the pleasure of the commission. They also employ other assistants and fix their compensation. The state engineer makes surveys, establishes grades, prepares plans and specifications, and has supervision of all work on state roads; he is also required to give expert advice and perform such other engineering services for the state as the Governor may require. He is also required to make an annual inspection of all bridges exceeding 30 feet in length and make a report to the state highway commission. The commission is given authority to do investigative work, hold public meetings, etc. An organization chart of the state highway department is attached hereto.

HIGHWAY
COMMISSION

SECRETARY
AND
STATE ENGINEER



VII. WISCONSIN.

GENERAL INFORMATION.

The state has a land area of 55,256 square miles. The land in farms comprises 32,906 square miles. The population in 1910 was 2,338,860, of which 43 per cent. was urban and 57 per cent. or 1,329,540 rural, thus giving an average population per square mile of land area of 42.2 and a rural population per square mile of farm area of 40.4. The assessed value of all property in 1911 was \$2,941,412,842, and the ratio of assessed to actual value was about three-quarters. This would give an average of assessed property value per square mile of land area of \$53,500.00. The average assessed property per capita would be \$1,260.00. (Note that the property values are for 1911 and the population for 1910.) The total road mileage in the state is approximately 63,000 miles, and on this basis the average assessed value of taxable property per mile of road would be about \$46,600. The average mileage of roads per square mile of land area is 1.14, and the average mileage of roads per square mile of farm land area in the state is 1.91.

As nearly three-fifths of the people of the state live in rural districts it is evident that the state requires an extensive system of rural highways by which the farming, dairying, and stock-raising population can get their products to the railroad and market. Consequently the cheaper types of construction are likely to be used to a very considerable extent. As indicating the importance and progress of agricultural development in the state it may be mentioned that there were in 1910 21,060,066 acres of land in farms, and that the increase in value per acre from 1900—10 was an average of \$16.59. This increased valuation per acre represents an aggregate increase of \$349,386,000 or an amount, which at 5 per cent. interest would yield nearly \$17,500,000 a year, or nearly four times the average outlay of the state, the counties and the towns for road work.

In 1910 there were 88 municipalities having a population of 2,500 inhabitants or more. When it is considered that the state has a gross area more than six times that of Massachusetts and that the latter state has 185 municipalities of 185 inhabitants or more, the difference between the transportation requirements of the two states is strongly emphasized. Wisconsin must build its roads from an agricultural standpoint and Massachusetts from an interurban standpoint.

POLITICAL ORGANIZATION.

The state is divided into 71 counties, in which the governing body is a board of county commissioners elected for two-year terms, who are authorized to vote on the method of paying road taxes in their county. The law provides for a selection of a continuous system of roads in each county, to be known as "the county system of prospective state highways" by its county board. The improvements on this system are made by a county highway commissioner, who is selected by the county board, under the general direction of the state highway commission. Aside from the state aid roads, the local road work is largely in the hands of the town officers. General charge of the roads in the towns is in the hands of the town boards of supervisors, consisting of three members elected annually. These officials divide their towns into road districts ranging from one to fifty and place a road superintendent or path-master in charge of each district.

CLASSIFICATION OF HIGHWAYS.

There appear to be only two distinct classes of roads, namely, the state aid roads, which are selected in the first instance by the county boards, and the town roads, which are controlled by the town boards. The state aid roads are constructed by the town, county and state jointly, each paying one-third of the cost, or a county can assume two-thirds of the cost and a state one-third. Bridges over six feet in span are paid for, two-fifths each by the town and county and one-fifth by the state. The state aid roads are improved under the general direction of the state highway commission and in accordance with plans and specifications of the commission. If improved, hard-surfaced roads are maintained by the counties and the dirt roads by the towns.

STATE INDEBTEDNESS.

The total debt of Wisconsin municipalities and counties in 1909 is given as \$29,042,316, of which approximately 12 per cent. consists of county debts, 3 per cent. town debts, 51½ per cent. village debts, and 79 per cent. other municipal debts.

The bonded debt of the state, created in 1861-63 for the purpose of carrying on the war for the maintenance of the Union, has now all been paid or converted into certificates of indebtedness to the trust funds, except one thousand dollars, which was paid from the General Fund, August 12, 1888.

Distribution of the debt on June 30, 1912, was as follows:

Certificates of indebtedness, School Fund	\$1,563,700 00
“ “ “ Normal School Fund	515,700 00
“ “ “ University Fund	111,000 00
“ “ “ Agricultural College Fund ..	60,000 00
	<hr/>
	\$2,251,000 00

REVENUES AND EXPENDITURES.

The total property tax levied in the state in 1911 was \$32,610,975, made up of state tax \$4,614,446, county tax \$7,422,094, and local tax \$20,574,435. The average tax rate for 1911 was, state 1.109 and local 1.738¾. There was derived by the state from the income tax approximately \$2,200,000, the number of taxpayers paying income tax being 46,582. Corporations paid over 66 per cent., manufacturers in corporations nearly 11 per cent., professionals nearly 8 per cent. and farmers less than one-third of one per cent. of the income tax. There was derived also from inheritance tax \$738,528. An ad valorem tax on railroad corporations produced \$3,604,165, the street railways paid \$525,128, of which the state retained \$78,769. The receipts to the general fund for the year ending 1912 were \$7,836,585.03, made up as follows:

Interest on certificates of indebtedness.....	\$157,570 00
Free high schools	150,000 00
Graded schools	120,000 00
New Capitol	
Northern Hospital	
Suit tax	7,720 00
From counties for charitable and penal institutions.....	364,244 27
Inheritance tax	783,528 90
Railroad companies	3,594,473 18
Freight line companies	8,473 42
Express companies	16,266 43
Palace and sleeping car companies.....	12,633 04

Street railway and electric light companies.....	471,369 07
Telegraph companies	21,741 30
Boom and improvement companies.....	20 79
Plank road companies	27 06
Fire insurance companies	151,510 12
Life insurance companies	518,107 26
Accident, surety, etc., companies.....	49,352 91
Telephone companies	77,930 16
Charitable and penal institutions.....	157,794 16
Fish and Game Department.....	163,611 07
Miscellaneous.....	1,014,204 89

Total book receipts (including transfers, agency transactions and refunds)\$7,836,585 03

In addition to the general fund there are certain other funds, such as the school fund income, the university fund income, etc., which consist of moneys collected by the state and distributed under the law to the several localities and to be expended for local purposes. For example, the school fund income and the university fund income each amount to over \$2,000,000. Among the principal items comprising expenditures of the general fund during the school year 1912 were the following:

Circuit Courts	\$178,596 00
Fish and Game Department.....	119,161 00
Insane Asylum	495,432 00
Schools for the Deaf.....	58,741 00
State Park Board	72,579 00
Wisconsin Veteran Home	124,000 00
County agricultural societies	109,900 00
State Capitol	790,029 00
Commissioners of Fisheries	59,172 00
State University	612,911 00
Normal School	433,798 00
County Training Schools for Teachers	76,661 00
Free High Schools	121,822 00
Graded schools	110,700 00

These are in addition to the executive and legislative departments and other large routine items of expenditure. The total net disbursements from the general fund for the year were \$5,385,999, and the total net disbursements from eleven funds for the year were \$10,664,538.

From the foregoing it would appear that the net annual revenues to the general fund amounted to \$3.35 per capita.

ROAD CONSTRUCTION AND MAINTENANCE.

The state aid law was passed by the legislature in 1911, at which time an annual appropriation of \$350,000 was made, the work to be done under the following plan: Whenever a town appropriated \$400 or more the county was compelled to raise an equal amount, and the state would then add an amount equal to that raised by the town and county respectively, or one-third of the entire sum. In the matter of state-aid bridges, the town and counties each provided two-fifths of the cost, and the state one-fifth. The respective counties outlined a system of prospective state highways which after approval by the state highway commissioner constituted a system of roads on which state aid would be granted. During the first year's work out of 1,195 townships in the state, the commission received applications for state

aid from 532 townships. The outlay by the towns, counties and state on state-aid roads and bridges during 1911-12, the first year's work, was \$1,350,000. The roads built during that year were as follows: Crushed stone macadam, 140 miles; gravel macadam, 110 miles; shale, clay and other surface, 35 miles; making a total of about 500 miles of road. The bridge work consisted of 140 state-aid bridges, built at the cost of \$111,355, and 120 county-aid bridges, approved by the commission, costing \$198,983, making a total amount for state and county-aid bridges in 1912 of \$310,339. During 1912 there was available, in addition to the \$350,000 appropriation, \$28,000, comprising 25 per cent. of the net proceedings of the automobile fund of the state. When the legislature met in January, 1913, it made an additional appropriation, bringing the state's share up to about \$816,000, thus making available for the 1913 work under the joint town, county and state arrangement \$2,500,000. The roads constructed were as follows: Concrete roads, 26 miles; stone macadam roads, 290 miles; gravel macadam roads, 155 miles; shale or clay surfaced roads, 63 miles; graded but not surfaced, 460 miles; total, 996 miles. This would make a total at the close of 1913 of about 1,496 miles, of which about 936 miles were gravel, 100 miles shale or clay-surfaced, and 460 miles graded but not surfaced. The leading type of construction has been 9-foot gravel and macadam roads. As the total outlay to the close of 1913 has been approximately \$3,700,000 for the 1,496 miles of road, the average outlay per mile would be something under \$2,500. In the report to the Joint Congressional Committee, February 7, 1913, Mr. A. R. Hirst, State Highway Engineer, reported the average cost of gravel roads as \$1,746 per mile, and macadam road \$3,570 per mile, this being on the basis of a road nine feet wide. He reported an 18-foot concrete road in Milwaukee County as costing \$14,200 per mile. The gravel and macadam roads, if built fifteen feet wide should cost on this basis about \$2,600 and \$5,700 respectively. The highway commission considers the 9-foot road as decidedly the most economical and practical at the present state of agricultural development in the state, and it expects this width to continue for some time to come. The state highway department also seems very favourably disposed toward concrete roads. For the 1914 work the legislature has appropriated \$1,200,000, plus 25 per cent. of the net returns from automobile licenses.

As indicating the growth of road improvement in the state, 1,211 governmental units in the spring of 1913 voted \$1,548,839. To this the counties will add an equal amount and the state will add the \$1,230,000 available from the registration and automobile fees, making a total available for 1914 of \$4,327,778 to be expended under the state-aid plan.

A separate appropriation has been made each year, beginning 1911, for administering the highway department. The appropriation for 1911-12 was \$40,000 and \$60,000 for 1912-13. The appropriation for administrative work, 1913-14, is \$90,000, and for 1914-15 and thereafter, \$100,000.

The state highway commission has issued an allotment sheet, showing the amount due each county from the \$1,250,000 state highway appropriation based upon taxes voted by townships, villages, cities under 5,000 population and counties.

The work of construction under the Wisconsin plan is carried on under the immediate direction of the county highway commissioner appointed by the county board and the surveys, plans and specifications and final supervision are furnished by the state highway commission. The hard-surfaced roads built under this plan are maintained by the counties and the dirt roads by the towns. There does not appear to be any state supervision of maintenance.

ORGANIZATION OF STATE HIGHWAY DEPARTMENT.

The state highway department was established in 1907 as a division of the state geological survey, with an annual appropriation of \$10,000 for educational work. This continued until 1911, when the highway commission in its present form was created. The commission is non-salaried, and consists of three members appointed by the Governor and two ex-officio members, consisting of a state geologist and the dean of the College of Engineering. The following organization chart illustrates graphically the organization of the department.

<i>State Highway Engineer.</i>			
Chief Clerk	Chief Inspector	Bridge Engineer	Engineer of Surveys
File Clerk	Asst. Inspector	Asst. Bridge Eng.	Surveyors
Stenographers		Surveyors	Draftsmen
		Draftsmen	
		7 Division Engineers	
		Asst. Engineers	
		Draftsmen	

VIII. CALIFORNIA.

GENERAL INFORMATION.

The state has a land area of 155,652 square miles, of which 43,582 square miles, or about 28 per cent. of the total land area, comprised farm land in 1910. The population in 1910 was 2,377,549, of which 61.8 per cent. was urban and 38.2 per cent., or 907,810, was rural, or an average rural population per square mile of farm land of 20.8. The average population per square mile of land area was 15.3. There were seventy municipalities having a population of 2,500 inhabitants or more in 1910. The total mileage of all roads in the state is 48,069, or .308 miles of road per square mile of land area and 1.103 miles of road per square mile of farm area. The total population per mile of road in 1910 was 49.47, and the rural population per mile of road 18.88. The average value per farm of farm property in 1910 was \$18,308, and the number of farms 88,197. The total assessed value of all property in 1912 was \$2,919,855,033, and the ratio of assessed to actual value was about 50 per cent. On this basis the assessed value per square mile of land area was about \$18,750, or an actual value of about \$37,500, and the assessed value of taxable property per mile of road was about \$10,500, and the actual value about \$21,000. The assessed value of all taxable property per capita was about \$614, and the actual value about \$1,228. As an indication of land values it may be stated that the census bureau gave the average value of farm land in California in 1910 as \$47.16 per acre, which was an increase of \$25.29 per acre, as compared with the value for 1900. As there were 27,931,440 acres of land in farms in 1910, the increased value alone would represent approximately \$700,000,000.

POLITICAL ORGANIZATION.

There are 57 counties in the state, for each of which the governing body is a board of county supervisors elected by the people for a term of four years. Under the direction of the board of supervisors is a county surveyor, who has charge of road work in the county. The counties are divided into districts, but the county appears to be the principal unit of local administration. The municipalities of the state are divided into six classes according to population. The larger cities have mayors and councils, and the smaller cities have boards of trustees.

STATE INDEBTEDNESS.

A summary of the net indebtedness of the state by bonds outstanding July 1, 1912, is as follows:

Civil bonds of 1857, 7 per cent.....	\$	3,500 00
Civil bonds of 1860, 7 per cent.....		500 00
Funded debt bonds of 1873, 6 per cent.....		2,277,500 00
Seawall bonds, 1905, 4 per cent.....	\$2,000,00 00	
Value of bonds in Seawall sinking fund.....	\$496,950 00	
Cash in same	3,869 27	
		<u>500,819 27</u>

Net indebtedness	1,499,180 73
San Francisco Harbour Improvement Bonds of 1909, 4 per cent.....	1,000,000 00
State Highway Bonds of 1909, 4 per cent.....	400,000 00
	<u>5,180,680 73</u>
Total net indebtedness, July 1, 1912.....	\$5,180,680 73
Total of bonds outstanding, July 1, 1912.....	\$5,681,500 00

The bond issue redeemed was that of January 1, 1893, consisting of \$600,000 4 per cent. bonds, for San Francisco ferry and passenger depot.

Since July 1, 1912, the bonds sold to November 15, 1912, were as follows:

July 11th, \$1,200,000 of State Highway bonds.
 October 1st, \$750,000 of San Francisco Harbour Improvement bonds.
 November 12th, \$250,000 of San Francisco Harbour Improvement bonds.
 November 14th, \$400,000 of State Highway bonds.

All sales were made at par and accrued interest. The total state bonds outstanding on November 15, 1912, were therefore \$8,281,500.

Total highway bonds sold to October 1, 1913, \$4,700,000.

The \$18,000,000 bond issue was authorized by vote in 1910 for the construction of a state highway system. The bonds were to bear date July 3, 1914, par value \$1,000 each, interest at 4 per cent., payable semi-annually, to mature \$400,000 annually from and after July 3, 1917 to 1961, and to be sold in such amounts and at such times as might be desirable. It was contemplated by the framers of the Act providing for the bond issue that the state should pay the principal of the debt and the counties in which the roads were to be located should pay the interest. The Act was unfortunately framed, as the Attorney-General has construed the law to mean that no interest can be charged against a county until there has been expended therein the amount of money on which the interest charge is based. After the county is notified of the interest charged against it about ten months must elapse before the sum can be raised by taxation and paid into the state treasury, and in the meantime additional amounts of bond money are being expended for which the state cannot even present a claim until the beginning of the following fiscal year. This means that it is sometimes nearly two years after bond money has been expended before the interest can be recovered by the state, while in order to meet the demands when due there must be kept in the treasury a considerable amount of funds unexpended. Another difficulty has arisen due to the fact that a large purchase of field and office equipment was necessary which cannot be pro-rated among the counties until it is learned how much the total expenditure is going to be in each county.

At the close of November, 1912, there had been issued \$2,000,000 of the \$18,000,000 authorized. An estimate of the probable rate of expenditure of bond fund year by year is given by the highway commissions as follows: Issued to December 1, 1912, \$2,000,000; needed during 1913, \$4,600,000; 1914, \$5,000,000; 1915, \$6,000,000; 1916, \$1,400,000.

REVENUES AND EXPENDITURES.

The total receipts to the state treasury for the fiscal year ending June 30, 1912, were \$21,445,956.99 and the total disbursements were \$18,691,877.28. The receipts however, are not all for state use; certain amounts are merely collected by the state for the benefit of the counties and municipalities to be paid over to them. A second class of receipts which are not available current revenues are trust funds of which the principal may not be expended. A third class of receipts is made up of those funds which are not for general state purposes but are for special uses. A detailed statement showing receipts for the year 1912 is as follows:

I. Taxes:	
1. State corporation taxes:	
Railroads and street railroads.....	\$4,775,750 79
Light, heat and power companies.....	1,225,419 80
Telephone and telegraph companies.....	424,697 98
Car companies	89,262 02
Express companies	102,351 07
Insurance companies	521,348 64
Banks.....	1,628,787 45
Franchises.....	1,619,588 36
	<hr/>
	\$10,387,206 66
2. Poll taxes	843,603 69
3. Inheritance taxes	1,083,243 87
4. Corporation licenses	802,012 50
5. Panama-Pacific Exposition tax.....	1,270,297 01
6. General property tax (delinquencies, etc.).....	197,145 77
7. Insurance brokerage tax	3,377 08
II. Fees, fines and licenses.....	
	677,498 82
III. Other department collections	
	715,452 57
IV. Institution receipts	
	966,634 07
V. San Francisco harbour receipts	
	1,254,287 32
VI. Sale of state lands.....	
	181,743 88
VII. From the United States Government.....	
	157,650 38
VIII. From bonds sales, interest and redemption.....	
	2,888,100 96
IX. Estates of deceased persons.....	
	13,870,000 63
X. Miscellaneous receipts	
	3,830 88
	<hr/>
Total.....	\$21,445,956 99

These receipts are classified as follows to show the amounts available for the general use of the state:

Not for state use	\$834,941 87
For state, but not for current expenditures.....	632,054 94
For state, but for special uses.....	7,378,094 28
For general uses of State (General Fund, less amount of bond refunds and railroad reimbursement).....	12,600,865 90
	<hr/>
	\$21,445,956 99

As indicating the character of expenditures the following table is given for the fiscal year 1912:

Legislative.....	\$71,301 67
Judicial.....	454,713 91
Executive.....	54,255 03
Administrative.....	645,501 26
Regulative.....	377,855 42
Defensive.....	220,176 53
Constructive.....	1,586,568 99
Educational.....	8,589,635 55
Developmental.....	588,040 89
Protective.....	110,347 11
Benevolent.....	762,720 90
Curative.....	1,776,737 01
Corrective.....	307,851 57
Penal.....	1,017,902 26
Bonds.....	1,320,276 87
Lands.....	11,803 21
Claims.....	1,976 26
Miscellaneous.....	12,987 84
Total.....	\$17,910,652 28

A study of the per capita of six states by the State Comptroller of California gives the follow results:

State.	Year.	Total Expenditures.	Per Capita.
New York	1910-1	\$69,163,624 28	7.44
Massachusetts	1910-1	14,269,849 61	4.17
Michigan.....	1910-1	12,596,951 99	4.42
Wisconsin.....	1911-2	10,581,801 80	4.43
Minnesota.....	1909-10	13,322,963 17	6.42
California.....	1911-2	17,197,005 05	6.73
California (after all possible deductions)	1911-2	14,465,905 31	5.66

While New York's total expenditure, as taken from the State Comptroller's report, were more than \$69,000,000, a little over \$30,000 was spent for canals and highways, leaving the other expenditures about \$39,000,000. The figures for Massachusetts include only the "general expenditures," so called, and there is in addition a somewhat complicated system of special fund expenditures. And in the case of each of the other states there is something which makes comparison on an even basis hardly practicable.

The total state and county property taxes for the year 1912 were \$35,962,920.48, which would make an average tax rate of \$0.0122, the tax rate for the various counties, of course, varying considerably. The state tax rate for 1912 on property was .0044. The total county bonds outstanding June 30, 1912, amounted to \$33,858,700 and the district bonds outstanding on the same date \$18,993,281.31, a total bond indebtedness of \$52,846,981.31, or an average per capita bonded debt of about \$22.00 and an average debt per \$1,000 of assessed property values of about \$55.00.

HIGHWAY CONSTRUCTION AND MAINTENANCE.

The state highway system contemplated by the \$18,000,000 bond issue comprises, first, the construction of two trunk roads, one along the coast and the other traversing the Sacramento and San Joaquin valley; and, second, the construction of such lateral roads as might be necessary to connect the county seats lying east and west of the trunk line. It was found that to comply with the terms of the Act not less than 2,760 miles of road must be included in the system. This would not

allow over \$6,500 per mile out of the funds to be made available by the bond issue. The commission, after a careful study of the situation, determined upon the following allotment of the fund:

TRUNK LINES.

1,305 miles, requiring paving, at \$8,620.....	\$11,249,246 00
480 miles surfaced with local materials, at \$5,944	2,852,905 00

LATERALS.

785 miles at \$2,881.....	\$2,261,485 00
Already improved county roads, 190 miles, add 10 per cent. for administration, surveys and engineering.....	1,636,364 00

Total bond issue\$18,000,000 00

Nearly all of the counties agreed to pay for the bridges on the state highway routes and to furnish rights of way.

The commission has adopted a pavement consisting of concrete base not less than four inches thick and fifteen feet wide with three feet shoulders. The concrete base is covered with asphaltic oil and stone screenings, forming a carpet from three-eighths of an inch to one-half of an inch thick. Where traffic is heavy, the thicker base and thicker wearing surface are specified. The maximum gradient in the mountainous country is 7 per cent. The bridges are of reinforced concrete 21 feet wide in the clear and designed to carry 16-ton traction engines.

The costs of roads which the commission had under contract August 1, 1913, were as follows:

	Miles.	Cost per mile.	Cost per square mile.
Asphalt on concrete base.....	6.6	\$14,920	\$1.06
Asphalt on macadam base.....	11.5	8,403	0.716
Three-eighths inch surface on concrete base.....	198.1	6,394	0.712
Bituminous macadam	19.1	6,364	0.723
Waterbound macadam	7.6	4,303	0.489

Concrete is laid without expansion joints and it is observed that natural contraction cracks develop about every 30 feet.

State highways are maintained by the state and no provision is made for sharing the burdens by the counties. To provide maintenance funds an automobile registration law, which became effective January 1, 1914, provides a system of graded fees for registration, which is expected to yield in excess of \$1,000,000 for the year 1914. After the expenses of the registering department is deducted half of the remainder goes to the maintenance of state highways and the other half to the maintenance of county roads.

The highway commission reports the total amount of bonds sold to October 1, 1913, at \$4,700,000.

Many of the counties have voted large bond issues and have built first-class systems of highways; among them Los Angeles, San Diego and San Joaquin.

Organization of State Highway Department.

By resolution of the state department of engineering a committee of three members known as the "California Highway Commission," was constituted to have full charge of the construction of the state highway system to be built with the state bond issue. The commission has appointed a highway engineer as the executive engineer of the commission, his duties corresponding with that of general manager

of a large private corporation. Under the highway engineer are the following divisions: engineering department, under the supervision of the assistant highway engineer. This department is further divided into eight subdivisions, each in charge of a division engineer and which represents the work in different parts of the state. A purchasing department, reporting directly to the highway engineer; accounting department, reporting directly to the highway engineer; financing and disbursing department reporting directly to the highway engineer; legal department, reporting directly to the highway engineer, and handling all legal matters in connection with rights of way, condemnation suits, etc.

IX. OTHER STATES OF THE AMERICAN UNION.

ALABAMA.

The State Highway Commission is appointed for four years, consisting of the Professor of Civil Engineering in the State University, State Geologist and three civilians appointed by the Governor. The Commission makes an annual report, recommending legislation. It also formulates a definite policy and may, with regard to this, refuse State aid for the construction of bridges.

The State Highway Engineer elected by the Commission is bonded at \$5,000 with a maximum salary of \$4,000. His duties are:—

(1) To be the executive of the Commission.

(2) To be the consultant to the Counties.

(3) To supervise and approve the State Highway System. The Staff consists of an Assistant State Highway Engineer, clerk, 9 resident engineers and 10 County resident engineers.

Local administration is in the hands of the County Commissioners who have their County Engineer. County forces may be used in construction, but where the cost of improvement exceeds \$3,000 for State aid, the State Highway Engineer may advertise for bids, the contractor being bonded double the amount of his contract.

The State contributes for State Aid Highways an amount equal to that contributed by the County which must purchase rights of way if necessary. All such roads are free of toll. Specifications for such roads must be approved by the State Highway Engineer and the aid is withheld until the work is well under way and \$1,000 has been spent by the County. State aid must be expended on permanent improvements on main-travelled roads, one continuous stretch to be finished each year. Surplus amounts may remain in the State Treasury to the credit of a County for not longer than two years, reverting at the end of that time to the common fund.

The State Highway revenue is derived from the Convict Fund supplemented by a special tax. Counties may issue bonds to the extent of 3½ per cent. of their taxable property.

COLORADO.

The State highway authority is the Highway Commissioner appointed by the Governor for four years with a salary of \$3,000; he is assisted by an advisory board of five members appointed by the Governor, one retiring each year. These members represent the districts in which they reside and are allowed only actual expenses. The duty of the Commissioner and his advisory board (whose unanimous consent and approval is necessary, the Governor, however, having power to approve or reject a majority agreement) is (1) To make appropriations for road and bridge work among the counties; (2) To give advice, assistance and supervision with regard to construction, improvement and maintenance of roads throughout the State; (3) To ascertain the location and nature of road material, to make rules and regulations and to present reports to the Governor. The Secretary of the Commission is a competent Engineer with a maximum salary of \$2,100. The local authority is in the hands of the various boards of county commissioners whose first duty it was, upon the appointment of the State Highway Commission, to prepare road maps of the respective counties, designating thereon a system of main or market roads and giving a statement as to the location and nature of road materials in their counties. In default of this duty, maps were to be prepared by the State Highway Commission, the expense being deducted from the first apportionment due the defaulting county. The State Highway Commission thereupon prepared a map designating the roads for which State aid was deemed expedient, not only for construction but for improvement and maintenance; according to the legislation, these roads must "provide an adequate system of State roads to the various market and business centres of the State, and connect such centres with each other." The State Commission might then divide such roads into those of primary and secondary importance, the former being constructed or improved before the latter. The next duty of the Board of County Commissioners is to make provision for the survey of such roads with the preparation of plans and specifications and a submission of estimates for the final approval of the State Highway Commissioner and his advisory board: in every case the Boards have to comply with the rules and regulations of the Commissioner. The Boards of County Commissioners have directory charge over all construction, improvement and maintenance on State roads in the several counties, with joint provision by counties for State roads which are inter-county boundary lines. The county authorities may also employ Engineers and with the authority of the State Highway Commission, let contracts to the lowest bidder, this being compulsory when the estimate is over \$2,000, the contractor being bound by an amount equal to half the contract price. The Board makes an annual report to the State authorities. By the Act of 1911, authorization was given for the formation of road maintenance districts under the supervision of County Commissioners and road overseers, with a Superintendent of roads and bridges for the whole county. A petition of 35 per cent. of the electors in a county guarantees the hearing by the Board of County Commissioners consequent upon which the County may be divided into road maintenance districts. A special road tax of \$3.00 or its equivalent in labour is due from every able-bodied male from 21 to 50 years of age in such road districts. Public improvement districts may also be established in counties, cities or towns, with authority given to the municipality to issue bonds bearing 6 per cent. interest for fifteen years, to be met by special levy upon the lots of land within the improvement district.

The State road fund consists of an annual appropriation of \$15,000, together with an equal amount to cover the current expenses of the State Highway Commission. Other appropriations may be made from time to time. There are no bond issues in the State, the only source of revenue at the present time being the percentage derived from the sale of public lands of which 5 per cent. is devoted to internal improvement. One-half of the revenue from automobile fines and licenses—motor vehicles up to

20 horse power	\$2 50
21 to 39 horse power	5 00
41 horse power and over	10 00
Motor cycles	2 00
Chauffeur's license	1 00
Manufacturers and dealers, for every five certificates	5 00

goes to the State, and half to the counties. The question of either a direct levy of $\frac{1}{2}$ mill per year or a bond issue is now in consideration. Of this State Road Fund apportionment is made to counties on the basis of population, area, amount of money expended on road construction, the difficulty and expense of construction and the extra expense connected with the development of new country. In default of notice within thirty days from the County Commissioners as to the amount proposed for expenditure, the State Highway Commissioner may expend this apportionment among other counties complying with the regulations. No money is to be expended within the corporate limits of a city or town. With few exceptions 75 per cent. of the money at the disposal of the State Highway Commission for distribution must be used for the counties which have provided an amount equal to the apportionment; this apportionment is, however, not available until the county has set aside its own funds. The remaining 25 per cent. may be expended as the State Highway Commission sees fit. The general county fund may have warrants drawn against it to the extent of 80 per cent. of the total amount of taxes levied. Counties may also issue coupon bonds, the interest being met by an annual levy. Convict labour from the State Penitentiary is granted to the counties upon the written request of a majority of the Board of County Commissioners. It is to be noticed in the way of division of cost and labour that electric railroads are expected to maintain and keep joint road and bridges in good repair, the railroad paying one-half the expense of construction and maintenance of new bridges, in default of which it must forfeit its franchise and right of way. The only direct county taxes are those derived from the poll tax in road districts and the abutting property tax in improvement districts, as mentioned above. Wide tire legislation has been recommended but is not yet adopted.

CONNECTICUT.

The head of the State highway organization is the State Highway Commissioner appointed for two years with a salary of \$10,000 during this period. His Deputy has charge of all new construction and financial and general management, with eight Division Engineers in charge of the field work in approximately equal districts. There is also a Superintendent of repairs and assistant, under whom are nine supervisors of repairs controlling the patrol work on the main trunk roads and repair work in general in their respective divisions. There is also an inside staff consisting of the chief clerk, draughtsman, etc., to attend to the drawing up of specifications under the direction of the State Highway Commissioner.

The revenue for State highway construction is derived from authorized bond issues, two-thirds of the appropriation of which, during the years 1913 to 1915 is being applied to the construction and maintenance of the trunk line system of which the State pays the entire cost. The revenue from automobile registration and fines is used for the maintenance of these trunk line highways.

Apart altogether from this main trunk line system, there is the system of State aid roads, which are main highways running from town to town, not included in the above mentioned plan. Seven-eighths of the costs of improvement of these roads (from $\frac{3}{4}$ to $\frac{7}{8}$ according to assessment) is contributed to the towns by the State. Upon the application of the towns, State aid is given. It is to be noted that the town municipalities and not counties, are used as the local basis.

DELAWARE.

The highway system of New Castle County is under the New Castle County State Highway Commissioner appointed by the Governor for four years and bonded at \$2,000, and his assistant, each with a salary of \$1,000. The duty of the Commissioner is to investigate, prepare plans and specifications, certify to the State Treasurer and the Levy Court of New Castle County, the itemized expenditure and to submit a biennial report to the General Assembly. The initiative for State aid is taken by the Levy Court whose resolutions may be approved by the Commissioner, whereupon the latter prepares the plans. Half the cost of construction of such highways is to be paid by the State; the other half is contributed by the Levy Court, which may borrow money on temporary loans. All such roads except those within the limits of municipalities are County roads and must be repaired by the Levy Court.

In this last connection, the court appoints a County supervisor bonded at \$1,000 whose duty it is to supervise repairs. Cities do their own repairing. The tax rate of New Castle County for highways averages four mills on the dollar and was so recommended by the County Commissioner in his 1913 report. There is a bonus for wide tires consisting of a rebate per year of \$1.00 per wheel of not less than 4 inches wide, from the road tax of any individual, up to three-quarters of such a road tax. Provision is made in the case of contractors for bonds or checks amounting to \$500 to accompany each tender while 5 per cent. of the contract price is to be retained for a year. The supervisor appointed by the Commissioner supervises all work done under contract.

IOWA.

The State Highway Commission (created in 1913) consists of the Dean of Engineering in the State College and two other members appointed for four years, by the Governor from different political parties, all three being compensated at \$10 per diem up to \$1,000 a year. The duty of this Commission includes (1) Having a directory charge over the entire system of roads; (2) Acting in an advisory capacity to County Boards and County Engineers; furnishing them with standard plans; (3) Investigating County conditions and disseminating highway information; (4) Keeping records and making annual report to the Governor.

The local authority in each County is the Board of supervisors, whose duty it is to employ a competent Engineer or Engineers bonded at \$1,000 to \$5,000. The Board is bound to designate from the highway within the County, not less than

10 per cent., and not more than 15 per cent. of the total mileage, for the purpose of establishing a County road system. This system is to consist of "the main travelled roads in the County, which must connect the principal market places of the County as well as connect with the County roads in adjoining counties." Such a system is not to include roads within the corporate limits of cities and towns. Having designated these roads, the Board of supervisors is required to furnish the State Highway Commission with County road maps which are open for inspection, consequent upon which public hearings of freeholders are held and petitions may be made asking for a change in the proposed system. The maps being approved by the Commission or the latter having designated a system upon failure of the Board of Supervisors to do the same, the County Engineer makes his survey, reports to the Board of Supervisors who await the final approval of the Commission. In the matter of bridges and culverts throughout the County, these are to be constructed and maintained by the Board of Supervisors, but only when public necessity demands, may the Board construct or maintain bridges within towns or cities.

All roads outside cities and towns and not included in the County road system, form township road systems. When all the County roads have been improved, the Board of Supervisors may transfer roads from the township system to the county system. The township authority is the Board of township trustees who determine every February, the roads to be dragged, appointing for this purpose a Superintendent. The County has also its own dragging system under the direction of the Engineer.

There is no State aid but automobile fees are at the disposal of the local authorities. The County funds may be expended for tools, machinery, improvement of the County road system and building of culverts having a span of 4 feet or less and are as follows:—

(1) A tax of one mill on all property including city property. Any portion of this fund rising from property within any municipality is expended on County roads within and without the limits, half of the amount being paid to the City Treasurer who must spend it on main roads within. The other half is paid to the County to be spent on roads without, but immediately contributory to the municipality.

(2) The County drainage fund, that is, a tax of one mill on the assessed valuation of the County, including property in cities and towns other than those of the first class.

(3) The County motor vehicle road fund consisting of an equitable distribution of 85 per cent. of the State license tax.

(4) The County road building fund, that is, two mills on all property outside corporations.

(5) The permanent road district fund which is an exceptional levy of not more than two mills on County property, half the expense to be assessed against abutting property.

(6) Convict labour from the State Penitentiary.

(7) Bonds (refunding) to take up outstanding floating indebtedness in excess of \$5,000, with special levy for same. This may be issued on a two-thirds vote of the Board of Supervisors.

(8) The County bridge fund, that is, a levy of not more than five mills on property outside cities of the first class, to be expended on the construction and repair of bridges and culverts anywhere except within such cities.

The township funds are to be expended by the township trustees on the township road system and are as follows:—

- (1) Road fund of four mills (maximum).
- (2) Township drainage fund of five mills (maximum).
- (3) Township dragging fund of one mill (minimum).
- (4) Statute labour for two days or its equivalent in cash.
- (5) Labour of the poor at \$.05 per hour.

KANSAS.

The present State organization consists of a State Engineer, drainage and irrigation engineer and three assistants: salary of the State Engineer being at the present time \$2,500. Recommendations are being made to the Legislature involving a change in the constitution whereby the State may be authorized to do internal improvement work. While the State makes no direct appropriation for road and bridge work at the present time, a small appropriation is available for the expansion department for roads, bridges, drainage and irrigation work. All the funds for road and bridge work are raised by direct taxation. The automobile tax (assessed under personal property and subject to an additional tax of \$5.00 per automobile and \$2.00 per motor cycle) is collected by the County Treasurers, 15 per cent. only being returned to the State for clerical expenses.

Owing to the majority of roads being earth, the maintenance of these lies with the owners of adjoining property with whom the county or township makes a contract for the dragging of the roads at from 50c. to 75c. per mile. The farmer then makes his report to the County Engineer by post card. It is to be noted that according to the State Law roads are classified according to their relative importance as (1) State roads (which are designated by the Legislature) (2) County roads (which connect cities and market centres and are as nearly as possible continuous from one county to the next: these are designated by the three county commissioners) (3) Mail routes; (4) Township roads (including all other public highways). The State and County roads are constructed and maintained at County expense under the direction of the three County Commissioners and the County engineer. The township roads are constructed and maintained under the direction of the three Township Highway Commissioners and the County engineer. A recommendation is being made at the present time to combine the counties into districts with a district engineer in charge and to vest the authority and office of the county surveyor and county engineer in the same person.

There is no wide tire legislation.

NEW HAMPSHIRE.

The head of the Road Department is the Superintendent of Highways, appointed by the Governor-in-Council for a term of one year with right to appoint his own employees. The State is divided into nine divisions, each being in charge of a Division Engineer responsible to the Department and having control over both maintenance and construction. The trunk line roads are laid out by the Legislature and extend north and south throughout the State which pays, generally speaking, three-quarters of the cost of improvement. The State Aid Highways

on the other hand, are selected by the various town authorities, largely for local purposes, the general supervision of the Department being given as in the case of trunk lines.

In addition to the annual appropriation made by the Legislature and the automobile fees (available for maintenance but not for construction, 65 per cent. going towards maintenance of trunk line roads, and 35 per cent. towards other State Aid Roads) the State Highway revenue may be derived from bond issues bearing interest at $3\frac{1}{2}$ per cent. for 13 years. In order to obtain State aid, towns must set aside an amount varying from one mill on the dollar on a valuation of less than \$2,000,000 to $\frac{1}{4}$ mill on valuation of \$15,000,000 or more. If a town desires State aid for permanent improvement in addition to that provided for as above, it must raise an additional amount equal to 50 per cent. of this sum. On application for State aid, towns receive from \$3.00 to 20c. for each dollar set aside according as valuation varies from \$100,000 to \$3,000,000 or upwards. A joint fund is thus set aside for permanent improvement.

The following is the list of registration fees for motor vehicles:—

Motor cycle	\$3 00
Commercial motor truck	10 00
Automobile, up to 15 H.P.	10 00
Automobile, 16 to 30 H.P.	15 00
Automobile, 31 to 40 H.P.	20 00
Automobile, 41 to 50 H.P.	25 00
Automobile, 51 to 60 H.P.	30 00
Automobile, 61 H.P. and over ..	40 00
Substitution of registration	2 00
Registration by non-resident	half the usual fees.
Neutral zone registration	2 00
Registration by manufacturers and dealers	40 00
together with half the usual fees rated by horse power.	
Operator's examination and license	3 00
Chauffeur's examination and license	5 00
Subsequent license	1 00
Special non-resident certificate and examination	2 00
Subsequent certificates	1 00
Additional copies	50
Additional plates	1 00

There is no wide tire legislation.

MONTANA.

The State Highway Commission (created in 1913) consists of two ex-officio members, namely, the Professor of Civil Engineering in the State College of Agriculture and Mechanic Arts, and State Engineer, who are allowed \$10 per diem, and a Civil Engineer appointed by the Governor, to act as Secretary with a salary of \$3,500 per annum. The first duty of the Commission was to prepare a map designating a State system of highways leading to the various market and business centres of the State and connecting the same, this system being based upon the County road maps received from the Boards of County Commissioners. The State highway fund appropriated out of the general fund of the State, is apportioned among the Counties by the State Highway Commission with the following taken into consideration:—

- (1) Area of County.
- (2) Money expended on road construction.
- (3) Difficulty and expenses of road construction.
- (4) The extraordinary expenses connected with the development of new country.

The State may also be bonded up to \$100,000. The condition upon which the full appropriation is granted is that the County shall raise by tax an equal amount, but none of this fund can be spent within the corporate limits of cities or towns. The duties of the State Highway Commission are:—

(1) To prepare rules and regulations for improvement, construction and maintenance of these State highways.

(2) To approve at their discretion the various specifications and preliminary assessments of the Board of County Commissioners.

(3) To receive the reports of these Boards and to make a detailed report to the Governor.

All public highways are divided into (1) State Highways (mentioned above); (2) Secondary Highways; (3) Common Highways. State Highways are those designated by the State Highway Commission to receive State aid, both for construction and maintenance. State Highways may be abandoned on the joint order of the Board of County Commissioners and the State Highway Commission.

The local authority is in the hands of the Board of County Commissioners whose duties are as follows:—

(1) To direct all road construction within the County, letting contracts for the same and bonding the contractor to the amount of one-half the contract price (20 per cent. being withheld until the work is completed and accepted).

(2) To keep the County divided into road districts with supervisors.

(3) To survey highways and order the maintenance of bridges, abolishing when unnecessary, and reporting to the State Highway Commission.

(4) To issue County bonds, employ road builders and purchase machinery.

(5) To prepare plans, specifications and preliminary assessments for work on State highways according to the rules and regulations of the State Highway Commission, reporting to the latter for final approval.

On the petition of ten or a majority of freeholders in the road district, the Board may establish, change or discontinue common highways, if the report of the Board of Viewers is favorable. The District Road Supervisors, bonded by this Board, have charge of the highways and bridges within their districts and make quarterly reports to the County Commissioners.

The County road fund is derived from the following sources:—

(1) A rate of two to five mills levied by the Board of County Commissioners.

(2) A general road tax of \$2.00 a head for all males between 21 and 50 years of age.

(3) A special bridge tax up to two mills.

(4) State and secondary highway bonds up to 5 per cent. of taxable property.

These funds are apportioned quarterly to the road districts. The net proceeds of the motor vehicle tax (\$2.00 per vehicle, \$10 for each type or style payable by manufacturers and dealers and \$2.00 for the registration of chauffeurs) constitute a separate fund for the improvement, maintenance and repair of State highways.

NORTH DAKOTA.

The Highway Commission (created in 1913) consists of the Governor, the State Engineer and one other member appointed by the Governor. Their duty is to furnish plans and specifications and to superintend, without compensation, the construction of any roads upon request of the County boards. The State Engineer prepares plans and specifications for bridges and culverts upon request of the local authorities.

The County system was revised in 1911 in order that the old system of County Road Superintendents and Township Overseers might be superseded by County Superintendents of Highways having complete charge and supervision of construction, improvement and maintenance of the roads, upon their appointment to this position by the County Commissioners. These County Commissioners act in their respective counties as highway boards and may create in unorganized territory road districts with overseers. When a County has organized townships, an overseer is appointed by the township board; if there is no County Superintendent of Highways he has complete control of the township work, but if there is a Superintendent, he is, ex-officio, his deputy.

Highway maintenance funds are derived from motor license fees (\$3.00 per year, the net revenue of which is returned to the County) a poll tax of \$1.50 on males between 21 and 50 and a property tax of from one to five mills on the dollar for the County. The township may levy a maximum highway tax of eight mills on the dollar. This township road tax may be paid in labour. Bridge bonds may be issued by the County for half the amount of cost, the other half being provided by the municipality. Such bonds bear a maximum interest of 7 per cent. and mature in twenty years.

OREGON.

The State Highway Commission (created in 1913) consists of the Governor, the Secretary of State and the State Treasurer and has "general supervision over all matters pertaining to the construction of roads, letting contracts therefor, and the selection of material used in the construction of roads" improved with State aid. The Commission appoints a State Highway Engineer with a salary of \$3,000 and bonded at \$10,000. His duties are (1) to compile statistics and investigate methods of construction; (2) to advise County Courts and furnish requisitions to the latter upon request; (3) to prepare a system of State Trunk Highways, reporting same to the Commission for their adoption; (4) to present monthly progress and annual reports; (5) to construct State roads. These State roads "shall in every case, lead into or towards the chief market centre of the State, and shall connect with, so far as possible, the principal County roads of the State." The State road fund consists of a special State tax upon the counties of one-quarter of a mill; the State may be bonded up to \$50,000 (including previous debts or liabilities) for ordinary purposes, but in the case of permanent roads, the bond may amount to 2 per cent. of the assessed valuation of property in the State.

Local administration is in the hands of the County Court and a paid County Road Master who has supervision over all County work, there being several methods by which County roads may be improved: (1) By resolution of the County Court, or (2) by petition to the Court from at least twelve freeholders of a road district, authorization may be given to the Board of County Road Viewers (consisting of the County Surveyor, the County Road Master and one other) to locate the road and

report to the County Court who may call for sealed bids, with bond double the amount of the bid; (3) instead of improvement by County or road district (over each of which is a yearly appointed supervisor) counties with over 150,000 inhabitants may organize one or more road assessment districts along any County road, not more than one mile wide. In this case the cost is to be defrayed by a special assessment of land within the district on the report of three sworn appraisors as to benefits resulting to each lot. Forty per cent. of the cost of improvement is the minimum charge against such property, for which indebtedness, non-taxable certificates bearing interest at 6 per cent. for ten years may be executed by the County Treasurer and issued on the holder of abutting land to any person in lieu of payment for road services or material. Such bonds may be given in part payment to the contractor, who is in no case discharged from his contract until 90 days after the completion of the work. Hearings are heard in the Courts on the appeal of property owners as to the relation between taxation and benefits.

Counties may be bonded up to \$5,000 or in the case of permanent roads up to 2 per cent. of the assessed valuation. The other sources of highway funds are (1) a cash tax of not more than 10 mills on all taxable property in the County (half of which revenue is to be apportioned to road districts according to the amount of taxable property in each); (2) an additional tax in any road district by majority vote, this constituting the district road fund; (3) a special road fund derived from a special tax on road districts of 10 mills on the dollar on the equalized assessment of the district in question.

Convict labour is under the control of the County Court and all prisoners, whether under sentence or committed in default of a fine, may be called upon to work on the roads. The net proceeds of automobile registration are returned to the Counties in proportion to the number of licenses granted in each County, the following being a graded list of fees:—

Transfer of sale fee	\$1 00
Registration of chauffeur	2 00
Motorcycles and motor bicycles	3 00
Electric vehicles for pleasure	3 00
Electric service vehicles	5 00
Steam, gasoline and other hydrocarbon operated vehicles for whatever use up to twenty-six (26) horse-power.....	3 00
In excess of twenty-six horse-power and inclusive of thirty-six horse-power	5 00
In excess of thirty-six horse-power and inclusive of forty horse- power	7 50
In excess of forty horse-power	10 00

VERMONT.

The State Highway Commissioner is appointed for two years by the Governor, with a salary of \$3,000 and a small office staff. His duties are (1) to control and direct the expenditure of all moneys appropriated by the State or apportioned to towns and incorporated villages for highway improvement; (2) to make and issue regulations to the Town Road Commissioners together with plans and specifications; (3) to control the expenditure of special appropriations made by the Legislature. This State highway revenue is expended on the permanent improvement of the main thoroughfares and most important roads in each town selected by the selectmen and town road commissioners, subject to the approval of the State Highway Commissioner. The general policy is to designate "trunk lines of improved highways from town to town and to the most important local railroad stations." It is

to be noted that the town and not the county is the local unit of highway administration. It is the town which selects the State roads, keeps them in good repair and receives the amount re-apportioned by the State. This is derived from a State highway tax of \$0.05 on the dollar annually assessed upon the grand list of towns, etc., for the support of highways. The tax so raised is re-apportioned and repaid to the towns and villages on a basis of road mileage ascertained by the selectmen. The direct appropriation is also available for cities and towns which vote an amount over that required by law; in such a case the State contributes an amount equal to the excess, provided it is not less than \$100 or more than \$1,000 in any one year.

The recent legislation tends to centralize highway authority in the hands of the State and provides for its redistribution on a new basis among the counties. Thus, the Highway Commissioner, with the advice and consent of the Governor, appoints annually supervisors for each county. These supervisors are his agents and not those of the county.

There are no bond issues. A maintenance fund exists, consisting of the net proceeds of automobile registration fees which are expended under the supervision and direction of the State Highway Commissioner in the several counties of the State. The annual registration of an automobile or motor vehicle which has not been registered in any previous year, is \$1.00 per horse-power. The second registration fee is .75c. per horse-power and the third is .50c. The horse-power is determined by the formula of the Association of Licensed Automobile Manufacturers. Wide tire regulations insist upon 3 inch for vehicles and loads from two to three tons, 4 inch for from three to six tons and 6 inch for over 6 tons.

WASHINGTON.

The State Highway Department consists of the State Highway Commissioner (appointed by the Governor for four years with a salary of \$5,000 and a bond of \$10,000), and a State Highway Board composed of the Governor, the State Auditor, the State Treasurer and a member of the Railroad Commission of Washington. The Highway Commissioner may appoint an assistant acting as chief clerk. The duty of the Commissioner is to keep a record of all highway proceedings, specifications and estimates, to submit a report before every session of the Legislature making recommendations and giving estimates, to compile highway statistics, to act in a consultant capacity to County highway officials on questions of construction, repair, altering and maintenance and generally to co-operate with the County authorities, furnishing them with plans and directions for the improvement of the public highways and bridges; he is also authorized to acquire by gift, purchase or condemnation right-of-way for State roads. The duty of the Highway Board is to decide what portion of the amount appropriated for any state road shall be expended within the boundaries of the several counties through which it is proposed to pass and at the discretion of its members to build any State road either by contract or force account, purchasing machinery for the same. When the work is done by force account, convict labour is extensively employed. All convict work on State roads is under the direction and supervision of the State Highway Commissioner. For the creation of a fund known as the public highway fund, the State levies a tax of 1¼ mills on State property, 5 per cent. of which revenue is set aside exclusively for the repair and maintenance of state roads under the direction of the Highway Commissioner. It is to be noted that highways within the state are divided into state roads (primary and secondary) and permanent highways. Primary highways, when constructed,

are maintained at the expense of the public highway fund; secondary highways at the expense of the counties in which they are located. If the latter cannot be maintained in this way, they are abandoned. In addition to these public highways, however, there are the county and township roads. The local authority is in the hands of the Board of County Commissioners whose duty it is to lay out, alter or discontinue county roads with supervision over all county highways except those the jurisdiction over which is vested in corporate municipalities; to license and fix the rates of ferriage; to fix the amount of county rates and to collect the same; and to divide when necessary the county into road districts conformable with the nearest school districts (which are apportioned among the commissioners with a resident road supervisor having charge of the public roads in each). The county surveyor, elected for two years and bonded at \$2,500, prepares maps, inspects bridges and makes his report to the Board of County Commissioners. The procedure by which county roads are laid out is by resolution of the Board of County Commissioners or by petition from bonded householders, followed by a preliminary examination and report of the county engineer; warrants to cover condemnation and damages are drawn upon the general road and bridge fund of the county. Bridge construction or improvement, if costing more than \$200 must be effected under contract with the contractor bonded at 10 per cent. of his bid. Compensation by railway companies for franchise over bridges goes to the State highway fund.

The county road funds consist of a road tax of 5 mills, a contribution of not more than 4 mills to the general road and bridge fund and not more than 10 mills in each road district (road district tax). There is also a bridge tax of 3 mills. Back taxes are paid into the special indebtedness fund while outstanding warrants against any highway fund are met by levies of 6 mills. (It is to be noted in this connection that there is also a state tax limited by the amount levied by the State Board of Equalization, a county indebtedness tax of 5 mills, a county current expense tax of 8 mills and a school tax of from 8 to 10 mills). In general no expenditure is allowed beyond 80 per cent. of the amount levied for funds. Road taxes received from municipal corporations are returned to the same for expenditure on streets. Township funds consists of a road and bridge tax not to exceed 8 mills except in the case of a special levy; 25 per cent. of the county levy is also set aside for construction and repair of such roads and bridges. In 1913, however, there were only two counties in the State with organized townships. County road bonds with a maximum interest of 6 per cent. and payable at a time fixed by the Board of County Commissioners can be issued for county roads and bridges and for State roads, the proceeds to be expended under the general direction of this Board, not more than 40 per cent. of which can be spent within any city or town; there is an annual levy to pay the interest and a special sinking fund inaugurated at least five years prior to the maturity of the bond.

Permanent highways (previously known as State Aid Roads) have the three following characteristics:

(1) The road must start from a trade centre, ("an improved public road constructed along a main line of travel, either beginning at some trade centre, or an extension of an existing road of like character beginning at some trade centre").

(2) Contracts may not be let for less than one mile.

(3) The road must be finished with hard surface.

Upon petition of owners of two-thirds the lineal feet of land fronting upon any public highway or section to the Commissioners (or by petition from the township board of supervisors) a resolution of the County Commissioners endorsing the plan is forwarded to the State Highway Commissioner who investigates and improves the same, engineering work to be done by the County Engineer under the direction of the County Commissioners. Of the contract price 20 per cent. is retained until the work is accepted. The cost of improvement comes out of the general road and bridge fund of the county to which is added a tax of 15 per cent. against the abutting property; this last provision is effected by constituting improvement districts between 660 ft. and three miles in width running along the stretch of road and divided equally as to width into three sub-divisions bearing respectively 7, 5 and 3 per cent. of the cost, the basis of estimate being the accruing benefits. A state tax of $1\frac{1}{2}$ mills is levied on all property in the State (permanent highway fund) the amount paid by individual counties being credited to the same. On the analogy of the public highway fund tax, mentioned above, 5 per cent. of this fund is used for the repairing and maintenance of permanent highways, and appropriations may be made from the public highway fund to the permanent highway fund. It is noteworthy that no railway or street railway company may construct its lines on permanent highways although such highways may be continued through towns of the fourth class.

Altogether apart from the above procedures there are three other means of highway improvement in vogue. (1) By the "Improved Roads System," under the direction of the County Commissioners, work may be done on roads starting from a city or trade centre or connecting with a railway or shipping station, the costs to "be apportioned as near as may be possible to the corporations, companies, persons and property benefited thereby." Upon petition of two or more persons owning property representing at least \$10,000 a mile of the proposed improvement and at least \$5,000 a mile within the improvement boundary (the petitioners being bonded) a survey may be made by the County surveyor and assessment of benefits and damages stated by three appraisors resident in the county but not in the territory in question. According to this plan, benefits are assessed against each corporation and individual interest, while the total cost of improvement is divided in the following manner: the County to pay one-third, the road district to pay not more than one-third, the property in incorporated towns and cities within 10 miles to pay not more than one-sixth while the property within the improvement boundary is to pay not more than one-third. The improvement cost is paid in the first instance from the general road fund of the county or by bonds bearing interest at 6 per cent. for a maximum period of twenty years (with the usual annual levy and sinking fund at the expiration of 10 years). It should be noted that public lands belonging to the State, County, School and school district are liable to assessment under this system.

(2) The second plan is the "Local Improvement plan" by means of which the route, methods of drainage or type of construction of existing county roads may be changed according to the decision of the County Commissioners or upon petition of owners of property fronting on two-thirds of the lineal feet of the proposed improvement. For this purpose the land in question is divided into assessment zones with three sub-divisions, the first bearing 45 per cent. of all expenses, the second 35 per cent. and the third 20 per cent., the sub-division being equal in width as in the case of the "Improved Roads System." The usual procedure is followed with regard to surveys, reports and contracts. The County Engineer and a com-

mittee of supervisors apportion the costs among the sub-divisions according to benefits, payment being made (1) within 30 days with 10 per cent. interest per annum, in default of which land may be confiscated; (2) or by warrants of payment in annual installments, which may be issued to the contractor in partial payment for his work; (3) "Arterial Street Improvement" by means of which roads without a town or city but immediately contributory to it and connecting with a public highway of not less than two miles in length, may be improved by resolution of the municipality, assessment being made according to local improvement district.

Wide tire regulations exist limiting loads (including the weight of vehicles) as follows:

Width of Tire.	Weight allowed per inch.
2—5 in.	400 lbs.—50 lbs. in excess of 2 in.
5 in.	550 lbs.
Over 5 in.	550 lbs.—70 lbs. in excess of 5 in.

If diameter of wheel exceeds 3 ft., an additional weight of 50 lbs. per inch on width of tire may be carried for each foot in excess of three feet.

The State quarries are self-supporting, there being no fund available for their operation other than the rotary fund which is credited with all sales of rock from the five quarries.

At the present time the automobile license is \$2.00 for each machine, the receipts going into the general fund. In his fourth biennial report, 1912, the State Highway Commissioner recommended an annual tax of 25c. per horse-power, while it is stated that there is considerable advocacy of an average fee of \$15.00 per automobile, the funds to be devoted to the maintenance of the trunk highways.

WYOMING

The State official is the State Engineer who makes locations and surveys for Counties at the cost of the latter. The only money spent by the State is by direct appropriation of the legislature. All other revenue for road construction is provided by the Counties to which the automobile fee (5 less \$1 for cost of issuance) is turned over.

There are no wide tire regulations.

APPENDIX No. 10

An Historical Sketch of Road Development in Ontario⁽¹⁾

The history of the Ontario road, whether interurban or purely local, is intimately connected with the growth and expansion of municipal government. Whatever the future has in store for it, the local administrative unit has already played an important part, in conjunction with the military and civil authority, in the development of the country. In the second place, even the most casual survey of the past will show that highway engineering requires at least as much expenditure as any other system of public works—a fact that was realized with difficulty in the last century. With these two questions kept in the foreground, the history of highway organization and finance assumes practical importance. An attempt has been made in this sketch to point out some of the more important phases in the history of road development in Ontario (2), chiefly in the days when the settlement of the older parts of the province had not been completed, together with a preliminary statement of highway conditions in Canada under the French regime.

Since the establishment in 1689 of the French road system under the supervision of a surveyor-general (*Grand Voyer*) and his deputies, the construction and repair of roads and bridges had devolved upon the properties and tenants in the capacity not of citizens but of individuals. The pioneer tracks across the front of the seigneuries, (known as “royal roads” because the soil belonged to the crown) were made and kept passable the year round by the landholder or the lord of the manor. The “back” and crossroads, however, were built by the joint labor of the individual who owned the “benefited” property and the community, the former being exempt from any maintenance duties on account of having furnished the right of way. All bridges with a span under four feet were built by the tenant, all others by the community.

Under this old French system, the way was already being prepared for local organization. General Murray had attempted to establish the statute labour system in Canada in 1766, endeavouring to bring home to the community the necessity of co-operation. A different plan was followed, however, by Governor Carleton who in 1777 appointed, without any derangement of the French system, surveyors for each district and placed the work upon a military footing. Thus a beginning was made of a military road system carried out as far as Upper Canada was concerned by Sir John Simcoe immediately upon the creation of that Province in 1791.

(1) (With particular reference to the settlement of the older parts of the Province and the Public Works policy of the last century.)

(2) The great success that has attended the opening up of Northern Ontario (notably by the Colonization Roads and the Northern Ontario Development Branch) has not been mentioned in the following; the annual reports of these directorates speak for themselves.

One of the earliest accounts of the British Settlement in Canada (3) estimates the population on the north shore of St. Lawrence from Point au Baudet to the Bay of Quinte as "at least ten thousand souls"; Fredericksburg (then known as the Third Township) contained in 1787 about seventeen hundred settlers, but "it is difficult to say what number of valuable subjects that country may hereafter produce; certain it is, that it is capable of supporting multitudes, as the land is in general fertile, and on an average produces about thirty bushels of wheat per acre, even in the imperfect manner in which it is cleared, leaving all the stumps about three feet high, and from five to ten trees on an acre. This method of clearing is in fact absolutely necessary, because new cultivated lands in hot climates require shelter, to prevent the scorching heat of the sun, which, in its full, however, would burn up the seed. It has also been found expedient in stony ground to let the stones remain, as they retain a moisture favourable to vegetation."

From another source (4) we learn that by the year 1791 "some thousands of people had spread themselves over the district of Niagara, and over lands still more remote from Quebec, particularly in the Western District. Between these new settlements and the country upon the St. Lawrence there were large tracts of wilderness intervening, which the Indians still held as hunting grounds, and through which there was no road whatever in the year 1791, nor for many years afterwards. The mail from Quebec found its way into this region but once or twice in a twelve-month; for it was in fact only capable of being traversed by Indians and hunters, or by persons as active and hardy as they. The common way of travelling from the upper country, to and from Montreal and Quebec, was through the lakes and rivers in the summer season; and some of the early settlers have said that when they first came into the township of Ancaster they had to ride sixty miles to Niagara through an Indian trail for every article they required, which they could not raise or manufacture."

In those early days and indeed for several decades, little or no thought was given to the commercial possibility of roads. The great lakes and rivers of the New World afforded transportation facilities which the early settlers scarcely imagined could be supplanted by roads hewn through the forest. A land journey was regarded as a more or less tedious *portage*; only the desire to avoid a long detour by water or to facilitate an existing portage could have justified the construction, as early as 1794, of Yonge Street and the Dundas Road.

A traveller writing a few years later of the eastern section of Upper Canada says, (5) "On the north-west side of the St. Lawrence, except for about fifty miles or thereabouts, are roads, and also scattered settlements, at no great distance from each other, the whole way between Montreal and Kingston, which is situated at the eastern extremity of Lake Ontario; but no one ever thinks of going thither by land, on account of the numberless inconveniences such a journey would be attended with; indeed, the difficulty of getting horses across the many deep and rapid rivers falling into the St. Lawrence, would in itself be sufficient to deter travellers from proceeding by land to Kingston, supposing even that there were none other to encounter. A water conveyance is by far the most eligible, and except only between

(3) John Long's Journal, 1768-1782-1791 (pp. 218-220), ed. R. Goldthwaite. (The Arthur H. Clark Co., Cleveland, 1904.)

(4) Canada: Past, Present, Future, being a historical geographical, geological and statistical account of Canada West, by W. H. South. Intro., p. xxxv. (Toronto, 1851.)

(5) Isaac Weld, Jr.: Travels through the States of North America and the Provinces of Upper and Lower Canada during the years 1795, 1796, 1797 (vol. II., p. 22). London, 1802.

Quebec and Montreal, it is the conveyance universally made use of in every part of the country, that is, when people merely wish to follow the course of the rivers, in the neighbourhood of which alone there are any settlements."

Thus the opportunities afforded by slack-water navigation, the prevalence of swampy land west of the Niagara Peninsula and in the eastern part of the Province, and the conditions that recurred annually with the Canadian spring, combined to militate against any serious attempt to improve transportation by land. To these causes may be added the temporary advantage conferred by the winter road, the snow and ice that formed from Kingston eastward obliterating any distinctions which might have been drawn in summer between good and bad thoroughfares. These roads, it may be noted, provided the sole opportunity for the hauling of grain and timber to the shipping ports. Highway legislation over a long period had been particularly concerned with the maintenance of winter roads, the French law compelling the *habitant* to level the track made by his *cariole*, to lower adjacent fences within two feet of the ground and to plant evergreen shrubs as a guide for the traveller. The summer road was in many places no better than a bridle-path, and its chief industrial use was as a means whereby grain could be taken to the nearest grist mill. It is estimated that only about one-third of the crop was sent out to market in the same year in which it was grown; in those days there was little competition, and the prices obtained more than compensated for the delay. With winter roads alone the settler could not be content. The summer road had to come into being, and with the advent of the *corduroy*, trees were felled by the hundreds, to bridge swamp land hitherto impassable except in winter and to convert the bridle-path into a highway.

The first highway legislation of Upper Canada was enacted in 1793, authorizing the Justices of the Peace to be highway commissioners in their respective divisions, with overseers elected at parish meetings, who were to act as fence-viewers and were under orders from the commissioners to repair and superintend work on roads, bridges and streets. It was also their duty to see that landowners fulfilled what had been known in England as "statute duty." At first the law compelled all inhabitants of parishes and townships (or their substitutes) to bring suitable road instruments and to work for not more than twelve days in every year, eight hours' work being exacted for each day; owners of carts, ploughs, oxen, or teams of two horses were obliged to lend their team and vehicle with one able man in charge for not more than six days. Commutation was allowed at the rate of 3s. per diem in the first case, and 6s. in the second case, but it was clearly stated that if the price of terms and labour in the parish was too high, labour could be demanded instead of commutation. Provision was made as well for an addition to the district assessment of not more than £50 if further money was needed. The difficulty of travelling at this time is illustrated by the section in the statute which authorized overseers to order the opening of a passage by property holders through the snow and the erection of "stakes or beacons" by the side of the road in order to guide travellers. This Statute Labour Law was constantly altered during the years that followed, the number of days of commutation being determined in 1798 by the assessment roll of the parish or township, the period varying from six days in the case of £100 assessment to twelve days if property was rated at more than £300. The minimum number of days was reduced in 1810 to but three if the assessment did not exceed £25 and it was enacted that no statute labour should be performed from the 10th of May to the 10th of June, or from the 1st of July to the 1st of October. This same Act authorized the Justices of the Peace in each district to

appoint one or more surveyors in every county and riding, with provision for a report of the latter on the question of highway alterations after due application from freeholders. The width of the roads might vary from 30 to 60 feet, the latter however being the minimum for froht and concession roads. The surveyor could sell old road allowances, the money to go to the owner of new land for compensation. Public highways were also defined as those laid out by surveyors, designated by Acts of Parliament, or built with the public money, also those on which statute labour was performed, and all roads passing through Indian lands.

The preamble to an Act of 1804 (44 Geo. III., c. 6) contains in the best manner of early nineteenth century documents a striking reference to the highway situation at that time: "Whereas it would very much advance the general prosperity of this Province, if the public highways and roads already laid out in the several districts thereof were amended and repaired, and new and additional roads laid out and opened in certain parts of the Province, to which at present there is very difficult access and certain bridges are also become indispensably necessary, the want of which at present much endangers the lives of the king's subjects; and whereas the rates heretofore imposed, and the duty by law required to be performed on the said public highways and roads are altogether inadequate to the several purposes aforesaid, and the imposing additional burthens by levying district rates sufficient for the several purposes aforesaid, would in the present circumstances of the Province be found inconvenient and the necessary provision can only be made out of the surplus of certain duties and taxes as yet unappropriated; in order therefore to defray the expenses of repairing, amending, laying out and opening such highways and roads, and making such bridges as aforesaid . . . Be it enacted. . . that from out of the rates and duties already raised, levied and collected to and for the use of the Province, there be granted to His Majesty, His heirs, and successors, the sum of One thousand pounds. . . . which sum of One thousand pounds shall be disposed of, appropriated and applied in the repairing of the roads already laid out and in the laying out and opening new roads, making bridges in the several districts aforesaid." This is the first case of general provincial aid in Ontario, and by it a precedent was set which was followed for several years. Particular roads were to be designated for aid by proclamation of the Governor-in-Council, special commissioners being appointed to look after the expenditure in the case of any particular road. Thus at a very early date, there is a division of duties in roadmaking between the Province and those local units which were later known as municipalities. These special commissioners were given exclusive authority over the roads in their charge, and no interference was tolerated from the Justices of the Peace in their capacity as ordinary highway commissioners. No provision, however, was made for Government maintenance, all such roads when built or improved passing into the general category. The amount of the grant was expended fairly evenly among the districts, and was increased from £1,000 to £1,600 in 1806 and 1808, and to £2,000 in 1810. It would appear that these grants were not always expended for in 1811 it was enacted that the accumulation of any surplus should be handed over by the retiring commissioners to their successors; on the other hand it was soon found that bridge estimates were very much exceeded by the actual cost, an instance in point being the construction of a "bridge of durable timber" over the Grand River in 1809 for which £250 was granted in that year, and supplemented by an equal amount in 1810. The roads to be improved by provincial grants were chiefly main travelled roads along township

fronts, to mills and wharves, from farm to farm and from tavern to tavern. Some attention was given as well to land improvement, as can be seen from the grant of £100 in 1810 for the purpose of draining the Grand River swamp, while the general opening up of the western country was effected by such expenditures on the Middle Road and Dundas Street in 1811 as were considered sufficient in the following year for the whole of the London and Niagara districts. A considerable amount was also spent during these years on bridges, particularly on those over the outlet of Burlington Bay and over the Humber, Credit and Don.

Meanwhile collection of the district rates had been put on a uniform basis by the Act of 1807—which ordered the assessment of an acre of cultivated land at 20s. and uncultivated at 2s., town lots being fixed at £10. The assessment of houses ranged from £15 to £60, additional fireplaces being valued at from £5 to £10. Grist mills were placed at from £100 to £150. A merchant's shop, a stallion and a billiard table were equally assessed at £200. It was stipulated, however, that the rate was not to exceed one penny in the pound. Uncultivated land goes up to 4s. in 1811, with town lots rated as high as £30 and houses at £20 as the minimum assessment.

The above legislation effected creditable results during the last years of the eighteenth century. While the statute labour system was not without its limitations it solved the problem of land transportation for at least the next half century. Taxes were too light to cause dissatisfaction, and Upper Canada received from her English visitors compliments upon the easy burden of her citizenship. On the whole the records of these early travellers furnish pleasant reading to the patriot; although the same cannot be said of the fustian written towards the middle of the last century in which the Canadian was represented as being vastly inferior in civilization and ideas to nearly, if not all, the nations of the earth. Reference to the "good road" between Kingston and Montreal has already been made. The same writer (6) has described a journey made in Lower Canada during August, 1796, which, in its account of the post-road, may be considered as redeeming the early Canadian highway from the reflections cast upon it during succeeding years. "In no part of North America," he writes, "can a traveller proceed so commodiously as along this road between Quebec and Montreal; a regular line of post-houses, at convenient distances from each other, being established upon it, where calashes or carioles, according to the season, are always kept in readiness. Each post-master is obliged to have four calashes, and the same number of carioles; and besides these as many more are generally kept at each stage by persons called *aides de poste*, for which the post-master calls when his own happens to be engaged. The post-master has the exclusive privilege of furnishing these carriages at every stage, and, under a penalty, he must have them ready in a quarter of an hour after they are demanded by a traveller, if it be day-light, and in half an hour, should it be in the night. The drivers are bound to take you on at the rate of two leagues an hour. The charge for a calash with a single horse is one shilling Halifax currency (*i.e.* 20 cents) per league; no gratuity is expected by the driver. The post calashes are very clumsily built, but upon the whole we found them easy and agreeable. They are certainly far superior to the American stall waggon, in which, if persons wish to travel with comfort, they ought always to set out provided with cushions for their hips and elbows, otherwise they cannot expect but to receive numberless contusions, before they reach the end of their journey."

(6) Isaac Weld (vol. I, p. 2).

Although the first stage in Upper Canada was not established until 1798, along the west bank of the Niagara River, from Newark to Fort Welland (the charge being five shillings and the schedule providing for three days in the week), Yonge Street had been built and Dundas Street was well under way. Ancaster was also connected with Niagara by means of a road built by private subscription—a striking instance of the public spirit of those early days, and of the prosperous condition of the Niagara Peninsula. In this connection, a short account of the incoming settlers has been left by the Surveyor-General of the Province to the following effect (7): “Nineteen covered waggons, with families, came in to settle in the vicinity of the county of Lincoln, about the month of June, 1798, and the facility with which some of these people travel, particularly in crossing the small rivers, deserves to be noticed. The body of their waggons is made of close boards, and the most clever have the ingenuity to caulk the seams, and so by shifting off the body from the carriage, it serves to transport the wheels and the family.” There is also an interesting description of the roads in the peninsula and of navigation on the Niagara River. “There is a good road,” says the writer, (8) “from Newark along the bank of the River Niagara, to Fort Erie, passing through Queenstown and Fort Welland, formerly called Chippewa; Queenstown on the lower landing (where there are huts for a regiment) is at one end of the carrying place, as Fort Welland is at the other. When the wind serves vessels run up from Newark to Queenstown, and unload their cargoes, receiving packs of peltries in return, for the Lower Canada merchants. Fifty waggons have passed this carrying place in the course of a day. In Woodhouse and Charlotteville (*township, Norfolk County*) which lie immediately within the long promontary, there is a great spaced country, thickly timbered, and without underwood, which greatly facilitates cultivation. It is well calculated for roads, and is sufficiently open for the carriages used in Europe, looking more like a royal forest than the uncultivated lands of nature. From Charlotteville there is a good road through the country to the Mohawk villages on the Grand River.” According to the same authority, the eastern part of the Province were not behind the general movement, for the land on the St. Lawrence front was “for the most part fertile and under as high a state of cultivation as can be expected from the time it has been settled; the first improvements being made since the peace of 1783, when all was in a state of nature and heavily timbered. There are now between 30 and 40 mills in the extent mentioned, on this river, the most remarkable of which are on the Gananoque. Good roads have been opened, and bridges well constructed; some of them over wet lands, and the mouths of creeks and rivers of very considerable extent; and the first settlers have been able, by their very great industry, to erect comfortable houses. The fertility of the soil about the Bay of Quinte,” continues the account, “is generally allowed; the land is rich, easily worked, and produces several crops without manure; twenty-five bushels of wheat are often produced from an acre.” Settlements had by this time also been effected in the back townships and on the Ottawa “or Grand” River.

The first main achievement to which reference has been made was the laying out in 1794 of Yonge Street by Governor Simcoe “who (says the Surveyor-General) having visited Huron by Lake aux Claires (formerly also called Ouentaronk, or Sinion and now named Lake Simcoe) and discovered the harbour of Penetanguishene (now Gloucester) to be fit for shipping, resolved on improving the com-

(7) A short topographical description of His Majesty's Province of Upper Canada in North America, by David Wm. Smyth. (London, 1799.) Postscript.

(8) David Smith; *op. cit.*, p. 31.

munication from Lake Ontario to Lake Huron by the short route, thereby avoiding the passage of Lake Erie. This street has been opened in a direct line, and the road made by the troops of His Excellency's corps. It is thirty miles from York to Holland's River, at the Pine Fort called Gwillimbury, where the road ends. From thence you descend into Lake Simcoe, and having passed it there are two passages into Lake Huron; the one by the river Severn which conveys the waters of Lake Simcoe into Gloucester Bay, the other by a small portage, a continuation of Yonge Street, to a small lake which also runs into Gloucester Bay. This communication affords many advantages; merchandize from Montreal to Michilimackinac may be sent this way at ten or fifteen pounds less expense per ton, than by the route of the Grand or Ottawa River; and the merchandize from New York, to be sent up the North and Mohawk Rivers for the north-west trade, finding its way into Lake Ontario at Oswego (Fort Ontario), the advantage will certainly be felt of transporting goods from Oswego to York, and from thence across Yonge Street, and down the waters of Lake Simcoe into Lake Huron, in preference to sending it by Lake Erie. . . . Farm lots of 200 acres are laid out on each side of Yonge Street, having a width of a quarter of a mile each, on the street; in general the land is excellent, and fit for every purpose of husbandry. After leaving Gwillimbury, you enter Holland River, and pass into Lake Simcoe by the head of Cook's Bay, to the westward of which are oak plains, where the Indians cultivate corn; and on the east is a track of good land."

A despatch from Governor Simcoe himself states that "the road from York to the head waters of Lake Huron has been opened by the soldiers, and by these means a very excellent track of country is rendered accessible to future settlers and a ready communication afforded to the post which public service demands should be removed from Michilimackinac to Penetanguishene or Gloucester." (9). . . . The trader who lives at Machadosh has had cattle driven to him this spring from York in six days; and nearly half of the road on Yonge Street is allotted to settlers." (10.)

A letter to the Home authorities advocating this route mentions the fact that the soil between the Bay of Quinte and Lake Simcoe "is perfectly calculated for farming, and before the summer the road of communication will probably be thickly settled; thirty families are now on the eve of being located in its vicinity and there is but little doubt but that by this communication the North West Company will supply themselves with many of their heavy articles, instead of by the circuitous route of Lake Erie. The inhabitants will soon raise abundance of provisions—in the meantime they can procure them at a cheaper rate from the Bay of Quinte than they are to be met with at Niagara." (11.)

This route to the North-west (12) was not the only object of Governor Simcoe in laying out Yonge Street; his general policy kept continually in view the establishment of a new capital for Upper Canada on the site now occupied by London. In a letter written in 1794 to the Duke of Portland he states that "his general ideas in administering the Government of Upper Canada are to form the condensation of a numerous agricultural people between the three lakes, Huron, Erie and

(9) Public Archives of Canada, Series Q., Vol. 282, Part I, p. 165. Letter from Governor Simcoe to Duke of Portland, Feb., 1796.

(10) *Ibid.* p. 26.

(11) *Ibid.* p. 39. Letter from Governor Simcoe to Viscount Dorchester.

(12) For trade routes to Michilimackinac, the Mississippi, and the Spanish Territory—see also Public Archives, Series Q, Vol. 280, Part 2, pp. 362-404, contained in Appendix (not included in this Report).

Ontario; to facilitate this purpose I wished to occupy an internal Capital in the spot designated London, by Military roads communicating with the important Military Point of *York* on Lake Ontario, *Turkey Point* near Long Point, on Lake Erie, and by the River with *Chatham* on the River Thames. These places if they should become military or naval arsenals must be towns of considerable consequence." Land was to be purchased from Chippewa Indians for the "proposed seat of Government and the continuation of the road to it." (13.)

In order to effect his favourite scheme, Simcoe was instrumental in establishing a post road from Burlington Bay to the Thames, at the present City of Woodstock, and in his report to the Privy Council in 1794 advocated the construction of a military road from London to Long Point. It was also part of his plan to connect by through highway the proposed capital at London with Quebec and to supplement by stretches of military road the already existing line from Kingston to the eastern boundary. The Surveyor-General, writing in 1799, states that "Dundas Street has been considerably improved between the head of Lake Ontario and York, and that the Government has contracted for the opening of it from that city to the head of the Bay of Quinte, a distance of 120 miles, as well as for causewaying of the swamps and erecting the necessary bridges; so that it is hoped, in a short time there will be a tolerable road from Quebec to the capital of the upper province." In the same year a continuation eastward of Dundas Street was opened by Asa Danforth from York to Smith's Creek in Hope Township, Durham.

While the above may be taken as evidence that highway construction was in a state of progress in these early times, military despatches are hardly complimentary in their reference to internal communications. It would appear that in certain parts of the Province the settlers were unwilling or unable to devote sufficient time to statute labour, with the result that military parties (the Queen's Rangers in the case of York) were required almost unaided to erect buildings, make bridges and cut roads. When the seat of government was moved from Newark (Niagara) to York, the latter was "in a manner cut off by the want of roads from an easy land communication with the rest of the Province," (14) while the general statement is made in 1798 that "the roads of the Province (particularly through the new settlements) are in such a deplorable state of neglect that the farmers cannot bring their produce to market; and the communication between the different parts of the Province is in consequence scarcely attainable except by water." In the Niagara Peninsula as well there was such a lack of good roads as to cause several complaints from the judges travelling on circuit and from petitioners on their way to the Government. It was, therefore, decided in 1798 (15), "that roads be opened with bridges between the Humber and the Credit and from the Credit to the head of the Lake, the work to be done by the Queen's Rangers."

For the laying out of such roads Augustus Jones, Provincial Land Surveyor, was summoned to York (16). Having laid out a "site for the Jail," together with streets, he "was pleased to write a letter to the President (of the Council) recommending a survey made of that part of the grounds from the Humber to the Credit to see the most eligible situation for the road to be opened, which the President approved of . . . Saturday, 19th May, '98—Busy marking the most eligible ground for a road from the mouth of the Humber to a Creek called Lamabinecouce.

(13) P.A. Series Q, Vol. 280, Part 2, p. 451. Letter from Governor Simcoe, 1794, to the Duke of Portland.

(14) Ibid., Vol. 283, Part 2, p. 580.

(15) Ibid., Vol. 286, Part 1, p. 45.

(16) Field Book of Augustus Jones, P.L.S.; published by the Ontario Archivist.

Struck it above the pond and marsh—fine weather—Sunday, 20th—Busy examining the ground between the aforesaid Creek and the Etobecoake, marked a line part of the way, went too far back. Came into low swampy ground where I left it—Monday, 21st May, 1798.—Busy marking a line from the aforesaid Lamabincouce to the Etobecoake nearer the lake than the other yesterday, which is better ground. Pleasant weather Wednesday, 23rd May 1798.—Busy examining the Etobecoake to find a place for to erect a bridge which is not so favourable as could be wished, the Creek spreading in many branches—the most eligible place is opposite Major Smith's clearing, a little above the Pond—went on the Credit. Pleasant weather. Thursday, 24th—Busy marking the grounds for the road from the Credit to the Etobecoake, marked from the Credit a strait course a back from the Crossing Points, found it too wet, returned back along the bank of Lake which is the dryest and best ground, fine weather, rain and thunder in evening. Friday, 25 May, 1798.—A survey of the grounds for a proposed road from the Plains about one mile west of the Credit leading to the Lake at the Credit, thence along to the mouth of the Humber along beach to the place proposed for to bridge the Credit, high winds from N.W." In the following month Jones was required to make a statement of the settlers on Yonge Street, together with a list of improvements, which included log huts and small or large clearings, in two cases as much as 40 acres.

The difficulties of campaigning during the War of 1812-1815 endorsed the opinion of the militia that the roads of Upper Canada had, except in a few instances, been sadly neglected. Two letters (17) are extant asking the Governments of the two provinces for substantial aid towards the improvement of the highways in the Eastern District, one written in 1808, before the war, by Bishop Strachan (then rector of Cornwall) declaring that this District "is perhaps worse off than any other in point of roads. The Scots Settlement (i.e., Glengarry) reaches so far back that a great number of roads are requisite; but they are in a wretched state, not always passable for horsemen and almost never for waggons." The other letter is from the pen of Bishop McDonell (then parish priest in Glengarry) written in 1815, at the close of the war. It pointed out to the Commissioners of Internal Communications for the District of Montreal that constant travelling of military transports had rendered all the back roads impassable, but that the main road was "very good for any description of wheel carriages through the counties of Glengarry, Stormont, Dundas, &c., &c., all the way to Brockville and very practicable to Kingston." There is, of course, the other side of the question, which finds expression in a private letter written in January, 1808, to a friend in England (18) by Sir Francis Gore, who says: "Another cause of dissatisfaction is the want of Roads. Is it reasonable for the people of this province to expect, after the bounty already lavished on it by Great Britain, that she is to make their Road? Concede this point to them, and we shall soon hear of their accusing Government of injustice, for not having built their houses. The fact is that the population will not yet afford of good roads."

In 1812 the roads in the neighborhood of York and Twelve-Mile Creek were "so much neglected since the beginning of the war, that during wet weather, in some parts, they are become totally impassable," wrote General Drummond to Sir George Provost. (19) As for the roads west of Niagara, they were in 1814 "so

(17) P.A. Series S (unpaged).

(18) P.A. Series Q, Vol. 311, Part 1, p. 8.

(19) P.A. Series C, Vols. 679, 682, 683, 688 B, 733, *passim* for despatches during the war.

excessively bad that should the enemy land at Long Point, they could with ease arrive at the Grand River, before Major Deane, and cut off his retreat in the passage of that River." When in the same year a military road was being built from Lake Simcoe to Penetanguishene, the repair of Yonge Street became imperative owing to the heavy transport traffic. In the East conditions were such that "the Grand River swamp tho' certainly bad is infinitely better than many parts of the road which are daily passed below Kingston," although 1813 has seen the construction at a cost of £150 of a stone road to Gananoque (20).

There is on record, it may be observed in passing, an editorial in the "Spectator" (published at the Village of St. Davids) of the issue of April 26th, 1816(21), enlarging upon the merits of a certain short route from Queenston across the Grand River through the counties of Lincoln and Haldimand, to the following effect:—"It is certainly a subject of wonder that the necessity of opening a road somewhat in the above direction has never before been suggested—a road that carries you through the centre of the county, a road that conducts you to the district of London, almost, as it were, on a level; you will not be plagued, and pestered, and teased and harrassed with your twelve, your fifteen, your sixteen-mile hills. The time, the distance consequently the expenses of the traveller will also be surprisingly diminished. What will the reader say when we tell him that in travelling from Queenston this new contemplated route to Davis's Mills (a distance of 60 miles) he will save thereby six." The editor proceeds to point out that if the traffic between Queenston and London District were estimated at 2,000 persons yearly (who would each be able to save one dollar and a half by the shorter route) the annual gain to the community would be at least \$3,000.

By the year 1821 the highway situation, however, was considerably improved; a map of that date(22) shows the main road system to be as follows:—(I) From Amherstburg to Aldborough, along the north shore of Lake Erie (Talbot Street), then bending slightly to the north-east to meet the road running from Dundas Street (at Brantford) southward to Port Dover, where two branches of this same road also converged. From Port Dover this lake shore line ran eastward to Fort Erie and turned northward to Fort Missasaga. (II) From Queenston a road also went westward to Ancaster, crossed the Grand River at the terminus of the Port Dover Road and turning south-west reached Sandwich, running thence to Amherstburg. This circuit formed by lake shore and through county lines was also connected by a road from the north-west corner of Dorchester to the Brantford-Port Dover road at a point in Oakland Township. (III) Parallel with this last route and separated from it by the Sandwich-Ancaster road was Dundas Street running from Dundas to London and passing through Woodstock (then Oxford). (IV) From Dundas a road ran eastward to York (following the lake shore) and thence to Kingston, with branches following the outline of the present Prince Edward County. (V) From Kingston a spur ran south-west into Fredericksburg Township, but the main highway continued eastward along the bank of the St. Lawrence as far as Vaudreuil, with an earlier and more northerly route running from the western boundary of Cornwall Township to the present Coteau Junction, where it again met the main road. From Vaudreuil a road followed the Ottawa River westward to Longueil. (VI) A few miles east of Kingston a road with numerous detours ran as far as Gower Township on both sides of the Rideau River, branch lines going to Perth and to Brockville. (VII) Yonge Street. (See above.)

(20) P.A. Series C, Vol. 273, p. 1.

(21) Vol. 1, No. 13, given in P.A. Series Q, Vol. 321, p. 190.

(22) Map (1821) in Gourlay's Volume on Upper Canada, and reprinted in this Report.—See following note.

The author of the volume containing the map to which reference has been made has left a valuable account⁽²³⁾ of general agricultural and highway conditions in the different townships during the years 1817-18. Unfortunately a misunderstanding arose between the author and certain ecclesiastics, which resulted in a withholding of returns from the townships in the east and a threatened trial for the enunciation of "principles inimical to the peace and quiet which the inhabitants of this province so happily enjoy." The reports published, however, reveal the nature of the charge; the ratepayers of the western and central portion of the Province freely give their opinion that the chief causes which retarded the improvement of Upper Canada were the holding of extensive lands by unassessed absentees residing in England, the existence of Crown, clergy and other reserves, want of capital and population and (in the case of Waterloo, Humberstone, Canboro and Caistor Townships) the extreme badness of the roads. Nor were these causes entirely unconnected; statute labour was wholly unable to cope with the construction and maintenance of roads through the country held largely by absentees, and the main highways suffered in this regard equally with the purely local roads. It is interesting to compare the situation on Dundas and Talbot Streets at this date. Governor Simcoe, with the honesty generally characteristic of his administration, had refused to allow grants on Dundas Street to other than actual settlers, but no sooner was he recalled than grants had been made indiscriminately. The Reporting Committee of Delaware, Westminster and Dorchester urged the purchase of Indian lands south-west of London and the continuation of Dundas Street over a road which was already in a tolerable state, with grants made to actual settlers only "on the principle of Talbot Street." That the latter, running through the lake shore townships from Aldborough to Bayham, had achieved noteworthy results in these settlements during a few years is shown by a table⁽²⁴⁾ of land improvements on this road compiled in 1817.

While the above land evils existed, as was inevitable in a young Crown Colony, the fairly comprehensive road system already outlined was being brought into effective use by the establishment of stages, following the precedent set in 1798 in the Niagara District. In 1816 a stage began to run twice a week between Kingston and Montreal (a two days' journey) and in the following year a weekly journey could be made from Kingston to York for \$18, reduced in 1818 to \$10⁽²⁵⁾ but the Prescott-York route was used only when water navigation was impracticable. In 1826 stages ran from the Cascade Rapids to Coteau Landing, and from Cornwall to Prescott (until the rapids were overcome in 1832, and the steamer "Iroquois" made its appearance). In the Western Peninsula, the first stage between York and Niagara was established in 1826, the fare being \$5 and the time seventeen hours; the following year saw the granting of a 21-year franchise to the stage from Ancaster to the Detroit River through Brantford, Burford and Delaware. Presently the four-horse coach appeared, and by 1842 a daily line, capable of meeting mail requirements, had been established throughout the Province.

(23) Statistical account of Upper Canada, compiled with a view to a Grand System of Emigration, by Robert Gourlay. Two vols. (London: Simpkin & Marshall, 1822.) Vol. 1, p. 269, sqq.

(24) Ibid., p. 352. (One settler who took possession of his grant in 1811 had performed military services during the war, cleared 60 acres and owned a farm worth \$2,200; another farmer arriving in the previous year had already cleared 15 acres and was worth \$1,300.)

(25) (For various transportation data) see *Eighty Years' Progress of British North America*, by H. Y. Hind, M.A., F.R.G.S., L. C. Keefer, C.E., and four others (Toronto: L. Stebbins, 1863), *passim*.

Meanwhile legislation in Upper Canada had been concerned with slight amendments to the Statute Labour Act, and not until 1821 is there again mention of a provincial grant. In that year money was appropriated towards "opening and completing the Great Line of Communication from the Ottawa River passing through Richmond and Perth to Kingston," with a view to opening up Carleton County. For this work the sum of £200 was granted and in the following year a market place was established at Perth. Two years later Major Elliott of the 68th Regiment received the report on the state of this road. (26) Owing to unfavourable spring conditions logs had actually been afloat for some time, and it was recommended that a road should be cut along high land instead of the low swampy ground where location had been made by the military settlers, who "have quite enough to do to feed and clothe themselves and families, without giving much more than the statute labour requires from them for the maintenance of the roads; and from what I observed as I went along I have every reason to suppose that if they are not materially assisted by His Majesty's Government it will still be many years ere this line of road is made passable for even an empty wheel carriage. In the present state of the road the settlers are completely cut out from all communication with each other except on foot, and consequently from the mills during the summer months, except they carry the grain on their backs thereby incurring an immense waste of time and labour, which ought to be bestowed on their farms. In the present state of the country," continues the report, "its utility is not very great in any other point of view than as a military communication."

The expenditure of £200 upon this Military Road, it may be noted, was the only assistance given by the Province to highways until 1826. For Upper Canada was becoming deeply interested in the question of internal navigation, to such an extent that a commission was appointed to carry out the construction of canals "between Lake Erie and the eastern boundary of this province" with an authorized expenditure of £5,000 for Burlington Canal alone, and frequent grants during subsequent years. Appropriations were made, however, for bridges in Johnstown district and over the Thames, Rideau and Otonabee rivers. It is noteworthy that in the first instance legislation provided for a district assessment of one penny in the pound for not more than five years, to constitute a sinking fund for repayment of a loan of £2,500. By legislation also in 1824 statute labour was ordered in towns under the direction of a surveyor of streets, and might be expended in the form of labour or money on roads and bridges in the vicinity of the town; thus co-operation between urban and rural communities was anticipated even before the establishment of Municipal Government. The expenditure of Statute Labour money in townships was also by this Act (4 George IV. c. 9) taken away from the overseers and given to Justices of the Peace. Subsequent amendments of the law up to the Union of the two Canadas touched lightly upon the statute labour question, but the advent of the toll road necessitated the exclusion in 1838 of macadamized roads from the list of those under statute labour and township overseers, and in 1840 the commutation of labour from residents living within half a mile of such roads at 2s. 6d. a day.

It was obvious that the old system of construction and maintenance by groups of settlers could not keep pace with the need of well built post-roads, nor that internal communication should suffer from badly built bridges and frequent fording places. The day of the toll-bridge and toll-road had come, but not without certain doubts and misgivings on the part of thinking men. When the question had been



Macadamized Road in Winchester, Ontario.



The Kingston Road in York County, near Toronto.

raised as to the means of building a bridge from Kingston to Point Frederick, negotiations lasted from 1821 to 1828, that is to say, for two years after the Cataraqui Bridge Company was formed. When the toll was finally fixed, the company could demand tenpence for every vehicle drawn by two horses or threepence for every foot-passenger and a half-penny for every single draught animal, while the Government paid annually £300 for the free passage of army and navy officers and privates crossing the bridge in discharge of their duty. Provision was then also made for the appointment of a commission of five to report, if necessary, on the state of repairs. While the construction of this bridge was necessary, the amount of toll was considered as "likely to enhance the price of all materials of this description (bread and meat) procured on the Kingston side," according to a criticism at the time.⁽²⁷⁾ The formation of several toll companies followed this experiment, the Brantford Bridge Company being formed in 1833 with a Government debenture of £1,500; in the same year the sum of £4,050 was raised by loan for a toll-bridge over the River Trent, and in 1834, for a bridge at Paris over the Grand River, £1,500. The tolls on all such bridges were to be fixed by commissioners appointed by the Governor-in-Council. A lengthy comparison might be made of expenditure on roads and bridges on the one hand and on harbours and canals on the other, during these years; it may be sufficient to point out that (to take a specific instance) in 1832 Government loans and debentures for Burlington Bay and Desjardins Canals and for Cobourg Harbour amounted to £10,478, while the road expenditure for the same year amounted to £75. It would appear from the amount of Government grants during the last ten years of Upper Canada as a separate province that it was the policy of the Government to encourage alternately land and water transportation. The Act of 1830, which named four or five commissioners to spend money on certain post and front roads in each district, granted £13,650 for the operation of such improvements as might be required, the grant being supplemented in 1831 by £20,000, which amount was finally spent in 1833. In this year Dundas and King Streets and the Kingston Road were improved under conditions which brought about a toll-road system that in a few places remains in existence to-day. With the appropriation of £25,000 for small stretches of road in the various districts (the commissioners working on the analogy of the present township road), and the survey in the same year of a line of road from Hamilton to Port Dover, the highway legislation of the old province of Upper Canada, in so far as concerns statute labour roads, comes to an end. From that time forward transportation developed along other lines, and the years 1835-1841 witnessed the incorporation not only of Harbour and Canal Companies but also of the Cobourg, the Port Dover, the Erie and Ontario and the Burlington and Lake Ontario Railroads.

The need of the military road, however, had not yet gone, for the unsettled condition of the times that preceded Lord Durham's report brought again into prominence the question of mobilization and the transport of stores. Negotiations for the construction of a military road from Canboro to Port Dover lasted from 1815 to 1839, the chief obstacle to a decision upon the route being the difficulty of obtaining any money from the Lords of the Treasury for highway work "unless it should appear that it was undertaken solely with a view of securing a temporary military communication on an emergency."⁽²⁸⁾ In 1815 "there was no Road by the Lake Shore to the Grand River; the water being so high has done away with the communication by the Beach," reads the military report. Such a road would,

(27) *Ibid.*, p. 173.

(28) P.A. Series C, Vol. 275, p. 38.

in addition to its strategic value, benefit the inhabitants who were "too few and too poor to spend much time to labour on roads, however aware they may feel of their importance." In 1836 orders were given to render the Canboro-Cayuga road practicable for artillery. The Commander of the Forces, it may be noted, had urged the coast route, but for financial and strategic reasons (owing to the ease with which attacks could be made from Lake Erie) the inland road had been approved, even against the opinion of the Home authorities, who objected to paying for a road used for "other than military purposes." This district was meanwhile partly served by a road from Canboro to Simcoe, expenditure on which was being reimbursed by a frontage tax of 10s. on every unsettled lot of 200 acres for ten years. In 1838 a warrant was issued for £1,000 out of provincial funds for a road from Simcoe to Drummondville, the work to be performed by military parties.

York County has the distinction of being the home of the Ontario toll-road, a Government loan of £10,000 being raised in 1833(29) with interest payable from toll revenues. Five trustees were named, with authority to cause surveys and estimates to be made, and to contract for the work. Commutation of tolls was allowed, but the penalty imposed for turning off a turnpike road in order to avoid toll, after proceeding part of the way, was ten shillings. Of this £10,000, four thousand was to be expended on Yonge Street and two thousand on the Kingston Road, with £1,500 for Dundas Street. After a period of fifteen years, when the last of the interest was due, these roads would become self-supporting and could pay off the principal in thirty years. This Act was followed by that of 1837 providing for the macadamization of the road from Dundas to Waterloo at an estimate of £25,000; Hurontario Street (south of Dundas Street to the Lake Shore) for £2,500; Hamilton to Brantford for £30,000; Yonge Street and other roads in the Home District by means of a debenture for £100,000; from Brockville to St. Francis with branch roads for £30,000; from Kingston to Napanee, and from Queenston to Grimsby for like amounts. Not only were these loans forthcoming from the Government, but it was expressly stated that if any deficiency was left by tolls in the Home District on which provincial credit had been raised in 1836, the balance would be obtained by means of an additional rate on all townships in this District. It was thus evident that the Provincial policy involved alike both the public community and the private company, and meant to make each responsible for the other. In the next few years trustees for several roads were appointed; in every case the financial interests of the Province were safeguarded and the people of the townships served were forced to commute their statute labour, the money being paid to the pathmaster of each division. It may be noted that the first mention of the term "Joint Stock Company" was in 1838 when the Windsor Road Company was formed with a capital of £5,000 in order to "establish a single or double railway or macadamized road or both from some point west of the Windsor Harbour in the Township of Whitby to the main York Road or Dundas Street." The Act of 1840(30) put these turnpike trusts on a uniform basis, and formed Boards of Trustees or Commissioners in each district, who were given authority over improvements on the macadamized roads, including the right to alter or sell old thoroughfares, with supervision over engineers, surveyors and collectors (to whom the tolls might be farmed out or sold by private tender). All persons living within half a mile of either side of such a road were required to commute statute labor at 2s. 6d. a day. Provision was also made

(29) Stat. U.C., 3 Wm. IV, c. 38.

(30) Stat. U.C., 3 Vic., c. 53.

for the co-operation of towns, it being stated in this general Act that toll-gates should not be removed from town limits until such corporations should assume part of the debt of the company.

The Union of the two Canadas did not occur until the Western Province had embarked upon a career of public works expenditure which, while characteristic of the times, was sufficiently advanced for a young colony to cause certain admiration from the Mother Country. Reference has been made to comparative expenditure on roads on the one hand and internal navigation on the other. The year 1840 saw the issuance of debentures for £31,055 to be spent on roads, and £90,250 for harbours and canals. Two years previously, interest on arrears in connection with public works expenditure had been so large that no more loans were allowed for improvement until all interest had been paid. The union with Lower Canada meant for this province increased expenditure in a department which had already assumed paramount importance. In 1842 a loan of £1,500,000 was raised in England, and by debentures chargeable on the revenue of the Province a slightly larger amount was voted chiefly for internal navigation, the draining of certain portions of the Sarnia-Quebec line and the macadamization of main roads throughout Canada West. The chief interest which the Municipal Act of 1841 has for the student of roads is the provision whereby the newly established District Councils might pass by-laws (subject to the approval of the Governor-in-Council) "for the making, maintaining or improving of any new or existing road, street or other communication and means of transit within the limits of the district, or for the stopping, altering or diverting any road, street, within the limits aforesaid," for the commutation of statute labour and the establishment of rates. By another Act of the same year the office of Commissioners of Roads ceased, and the Board of Works was established. District surveyors appointed by district wardens were required in any case to report to their councils; if the estimates exceeded £300 a decision had to be obtained from the Board of Works. In this way a provincial highway system came into existence, with the major authority in the hands of the Province, since it was expressly stated in the Act that all public works not specially vested in any other body should be under the control of the Board. Neither Act affected in the least the position of the turnpike road, the toll bridge or any provincial or military works.

Thus Canada West was already committed to building roads of macadam, gravel and plank; several being constructed by local funds, others out of the provincial revenue and all such surfaced roads controlled by Joint Stock or Turnpike Companies. The principle had been laid down by Macadam in 1820(31) that "it is the native soil which really supports the weight of traffic; that while it is preserved in a dry state it will carry the road and the carriage also; that this native soil must previously be made quite dry, and the covering impenetrable to rain must then be placed over it, to preserve it in that dry state; that the thickness of a road should only be regulated by the quantity of material necessary to form such an impervious covering and never by any reference to its own power of carrying weight." Judged by this standard, the *corduroy* had become hopelessly effete, but timber was in those days much cheaper than stone, and the plank road of the 40's and 50's was allowed to bring several turnpike companies sufficient revenue to reimburse many times over the cost of the original road. This method of construction was no doubt of value where the bed was of sand, and might be considered a transition stage from the earth to the stone road, gravel being at that time more expensive than it is to-day and not being considered sufficient for heavy traffic

(31) Report to the President of the Board of Agriculture, published with "Remarks on the Present System of Road Making, etc." John Loudon McAdam (London, 1821).

unless laid to a depth which would mean a greatly increased cost. Neither were plank roads, as a matter of fact, always a "paying proposition," for "if there is little traffic, they warp and rot, . . . if there is much traffic the horses' feet wear them down." (32) The superiority of macadam over the two preceding materials was generally admitted, but in Canada there was a "want of a sufficiently heavy traffic rapidly to consolidate the new road; two or three seasons are required to bind it, as these roads are avoided except for a short time in spring and autumn, unless sand or snow covers it. . . . The repairs are then postponed until the road is worn out, when it is again renewed *en masse*." It would also appear that the turnpike commissioners in Canada West were less willing to expend freely on their trusts than the officials in the lower part of the Province, notably in the neighbourhood of Quebec. "In Upper Canada on the other hand," says the same writer, describing the general toll-road situation, "the roads are generally in the hands of lessees or stock companies whose practice it is to lay out nothing upon them which can be avoided. There is no stronger instance of the patience and law-abiding disposition of the people than in their toleration of so great an imposition as most of the toll-roads of Upper Canada. . . . The continuance of so great a nuisance as barriers on even the best of roads must be regarded as evidences of a preference on the part of the most intelligent population of Upper Canada for direct taxation. It may be argued that those who wear out the road should pay for keeping it in order; but this might be met by an annual assessment on hoofs and wheels without the intervention of toll-gates. If the cities and market towns assumed the tolled roads, they have it in their power, by fees, market rates, &c., to levy the amount required and there would thus be bodies interested by their mutual competition in keeping the roads permanently in good order."

By the year 1843, (33) in addition to the operation of the turnpike trusts, the roads constructed under the direction of the Board of Works included gravel and plank roads from Sarnia and Brantford to London, a military road from L'Orignal to Lancaster, and in the following year a road from London to Sandwich and Amherstburg (with branches to Port Stanley and Rondeau Harbour on Lake Erie) and the Hamilton-Port Dover line. By means of local funds were constructed about this time a macadamized road running from Kingston westward, a plank road from Windsor Harbour on Lake Ontario to Lake Simcoe and lines from Hamilton to Queenston, from Oakville to Owen Sound and from Ingersoll to Port Burwell (the latter being built by a special "Road District Fund"). Yonge Street had already been macadamized by a local fund with Government assistance, and as a result of this and previous improvements farm values had risen. Building ground had increased in value within twenty or thirty years "from a few dollars per acre to as many thousand pounds. During my stay in Toronto, in the year 1844," writes a visitor to Canada (34) "six acres of land near to my residence in Yonge Street, and at the distance of one mile from the city, was sold in building lots, and realized the sum of £2,500. This allotment, and many other six-acre lots in the same street, about the same distance from the city were purchased, eighteen or twenty years ago, for £75 each. Proprietors of blocks of land extend their frontage to increase the value, by making branch roads from the principal ones leading from

(32) *Eighty Years' Progress*: chapter on Travel and Transportation (*passim*), for the following criticisms.

(33) See *Papers—Public Works, Canada*, ordered by the House of Commons, to be printed 21 August, 1843 (with map and data).

(34) *Narrative of a Voyage to, and travels in Upper Canada, 1846* (p. 22).

the city." When it is considered that these roads would compare unfavourably with first-class county roads to-day, it can be readily understood to what extent farm values are increased by good roads.

The same writer has also some light to throw upon agricultural markets and roads as this time, as follows: (35) "Markets in Canada are subject to great fluctuations in the price of agricultural produce. During the season it will sometimes vary upwards of one hundred per cent., from various causes, all of which operate against the interest of the backwoodsmen. Some settlers occupy land at a great distance from markets and where the roads are sometimes quite impassable, and have no inland navigation, consequently prices advance, owing to a scant supply in the markets; but when the roads are improved by frozen snow, and sleighs in full action, then the markets are generally over-stocked, and the prices much reduced. . . . I have noticed good teams in open winter weather enter the City of Toronto with very light loads of produce, that have had only a few miles of bad road to contend with, before they reached the turnpike road; and sometimes they are in such bad condition as to render it almost a matter of impossibility for the best horses to drag an empty waggon the distance of a single mile. The roads in some parts of the back settlements are merely openings, cut through the woods, and the stumps of the trees are left standing; and it requires the utmost skill of the drivers to guide the waggon in safety. The roads are so closely hemmed in on each side with the trees, that neither the sun nor the wind can much improve their condition; the winter's frost and snow alone can make them passable. Farmers who are settled at the distance of fifty or one hundred miles from the markets and are so circumstanced that they must from necessity part with their produce, take it to the nearest stores and mills, and leave the price to the honesty of the purchaser." It appears that the Government had in mind legislation proposing to defray part of the expenses of planking about one thousand miles of road in Huron District by taxing benefited lands to the extent of 8s. per acre for the first year of improvement and sixpence per acre annually until the completion of the road. Strangely enough the chief objection brought against such a scheme was that it would mean an "augmentation of the needy speculators' misery."

During the next ten years the planking and gravelling of roads throughout the Province tended to equalization of land values, more particularly between the front and back townships, but in several cases (as in Ernestown Township) farms on the road were worth twice as much as those further back and "the planks through the Townships of Toronto and Chincouacousy have added 50 per cent. to the value of the farms situated on them." (36) In Waterloo Township, at that time (1851) second only to York in population, the chief hindrance to improvement (as in 1821) was the badness of the roads. (37) The poor state of the thoroughfares in Simcoe County was credited to the "needy speculators" and the low assessment (only 4s. on the acre) for non-residents. The Huron tract had already been opened up by the Canada Company (with considerable profit to the latter) and traffic north-west of York had been increased by means of the Owen Sound Road to an extent best illustrated by the tale of a "gentleman holding an official appointment in the county, that having occasion to travel along the line when some new lands were opened for sale, he remarked that the tavern at which he was accustomed to put up, was in considerable confusion, and neither so clean nor so tidy, as he usually found it. On mentioning the circumstance to the landlady, she accounted for the state of

(35) *Ibid.*, p. 83.

(36) *Canada: Past, Present and Future*, Vol. 1, pp. 70, 273.

(37) *Ibid.*, p. 120.

affairs by remarking that during the week two thousand people had stopped at the house.”(38) In the southern part of the Province as well a notable change had been made by the construction of the Hamilton-Port Dover plank road. “No better example,” writes the same author, “could be shown of the advantage of making good common roads (that everybody may travel on) through the province, than is to be found in the country bordering the plank road from Hamilton to Port Dover; when we first travelled it, some five or six years ago, shortly after the new road was made, the country between Caledonia and Port Dover was a perfect wilderness, scarcely a clearing was to be seen, and a stranger would ask with surprise where the traffic was to come from to support the road. Mark the contrast: In five short years nearly every lot along the road has been settled and cleared and fine farms supply the place of dreary forests.”(39)

Meanwhile legislation had not been idle. By an Act of 1845, the Province entered among the turnpike trusts on its own account, asking tolls from travellers and merchants using several locks, harbours, the bridges between Ottawa and Hull, over the Trent, the narrows of Lake Simcoe, and at Dunnville, Caledonia, Brantford, Paris, Deleware and Chatham, as well as on “all such parts of the main road from Quebec to Sandwich, of the main road from Queenston to Hamilton, of the Port Hope and Rice Lake Road, of the Windsor and Scugog Road, of the Main North Road from Toronto to Lake Huron at Penetanguishene, of the Hamilton and Port Dover Road, of the London and Port Stanley Road, as have been or shall be macadamized, planked or otherwise improved at the expense of the Province under the superintendence and management of the Board of Works.”(40) In the following year another highway economy was affected by an Act opening Government allowances for such roads only as might be ordered by the District Council, and the newly created Commissioner of Works was given management and control of all public works constructed or maintained out of Provincial funds, including the making of surveys, granting of contracts and imposition of tolls. Another important step was taken at this time, whereby roads might be transferred from the Province to the District Councils, who were later allowed to take stock in the toll companies either by payment of money or improvement of certain stretches of road. The Province was also authorized to purchase toll-roads on repaying the capital, together with a bonus of 15 per cent. less the amount of the sinking fund. It may be observed that these Joint Stock Companies (road and bridge) had increased at a surprising rate throughout the Province, including from 1841 to 1847 trusts owning roads in the following localities:—Weston (macadam), Niagara and Ten Mile Creek (plank), Albion, Cobourg and Rice Lake (plank), Guelph and Dundas, Port Credit and Hurontario (plank), Guelph and Arthur, Cobourg and Grafton, Cobourg and Port Hope, Streetsville (plank), besides such bridge trusts as the Niagara Falls Suspension Bridge Company, incorporated in 1846.

Following the important legislation of 1849, providing for shareholding and ultimate purchase by the municipalities of these toll roads (one of the earliest stockholders being a combination of the municipal councils of Waterloo, Wentworth and Halton with shares in the Guelph and Dundas Road) it was enacted that roads situated in cities and incorporated towns should be vested in and repaired by these corporations, while all bridges and roads built by the Province and under the commissioner of works, might be released to municipalities on condition that no more tolls were collected. In the following year, that is to say in 1851, corporations were

(38) *Ibid.*, p. 112.

(39) *Ibid.*, Vol. 2, p. 163.

(40) *Stat. Canada*, 8 Vic., c. 30.

enabled to acquire public roads outside the limits of the municipality. It may be noted that in the case of Toronto, the Don Bridge and the Kingston Road east of that bridge were not handed over to the city. In 1857 municipalities were given the right formerly enjoyed by district councils to block up and sell useless roads, and two years later, all original road allowances were in the hands of these corporations, except highways under the direct control of the Board of Works or on ordnance lands. During this time there had been slight changes in assessment and statute labour regulations, the most important being the repeal in 1845 of the Act ordering commutation by ratepayers residing on macadamized roads. The chief change in assessment methods had been the levying of special rates in several instances on the local improvement plan.

The Consolidated Statutes of Canada, 1859, contain a Joint Stock Company Act for Upper Canada, which made careful provision for the proper conducting of business by such companies; tolls were still fixed by the companies themselves, but were not to be collected after a certain period of warning until the required repairs were made. It was also stipulated that municipalities might purchase after twenty-one years the company's stock at its current value. In the following year it was ordered that the County Engineer should examine into the state of such roads when necessary. Meanwhile the Assessment Act had been brought up to date, placing a municipal tax upon incomes (except those of farmers) and upon bank and railway stock among other incorporated companies (the personality of the latter not being assessed). Statute labour might now be abolished or compounded for five years by virtue of by-laws passed by townships, town and village councils, \$1.00 per diem being the maximum commutation. The last year of the old Province of Canada saw the beginning of a County Highway System, for by the Act of 1866 counties might assume roads and bridges under their own jurisdiction with the appointment of commissioners, and such roads were to be either planked, gravelled or macadamized.

The Government policy was received by no means with unanimous approval. After 1841 Provincial expenditure was being devoted more and more to canals, railways and the public debt, while the local units were thrown upon their own resources, with the result that "a load has been imposed upon many of the back counties, which they are unable to bear. . . . Again, the back counties contribute so much to the wealth of the front ones that the latter may with justice be asked to share a burden from which, by the natural formation of the district, the labours of their fathers, or from past Government aid, they are exempt." (41) The Colonization Road Scheme of the Government had, however, opened up some seven lines in what was then the northern country, i.e., the Ottawa and Opeongo Road, connecting the Ottawa River with Lake Huron, 170 miles long; the Addington Road, 61 miles long, intersecting the Opeongo Road; Hastings Road, 68 miles connecting Hastings County with Opeongo; the Bobcaygeon Road to Lake Nipissing; the Frontenac and Madawaska Road; the Muskoka Road—by means of which "the intending settler arriving in Toronto can in one day's journey from that city reach the very centre of the country," (42) and lastly, a road from Sault Ste. Marie to Goulais Bay.

(41) *Eighty Years' Progress*, p. 125.

(42) *Ibid.*, p. 306.

Before entering upon a brief summary of road development of this Province since it became known as Ontario in 1867, it might be well to review the period from 1841 in the following tabular form (43) :—

Mileage of Road constructed under Department of Public Works of Canada in this Province, 1841-1867.....	1,339.20 miles
(Cost of above construction work	\$1,300,564.50)
Of the above mileage the amount macadamized was	112.50 miles
Of the above mileage the amount gravelled was	793.95 "
Of the above mileage the amount planked was	129.75 "

The following public roads and bridges were sold to incorporated companies during the years 1850-1865, with the amount of purchase money:—

The Brantford Bridge, and the Road from Hamilton to the Western Boundary Line of the County of Wentworth, being composed of the Hamilton and Brantford Road, and part of the London and Brantford Road (except what lies in the Town of Brantford).....	£27,100 0 0
The Road through County Oxford, composed of all that part of London and Brantford Road, lying in said County, except what is in the Town of Woodstock	£50 0 0
The Hamilton and Port Dover Road and the Caledonia Bridge.....	\$17,000 00
The Windsor and Scugog Road, from Town of Whitby through Townships of Whitby and Reach to Lake Scugog, with bridges, tolls, etc.....	£2,500 0 0

(The road and bridge first mentioned were sold to the Brantford Road Company in 1850, but were reassumed by an Order-in-Council in 1863. The second road was later sold to Middlesex County.)

The following are the public roads and bridges sold to municipal bodies during the years 1841-1865:—

The Kingston and Napanee Road	£15,400 0 0
The Port Hope and Rice Lake Road	4,600 0 0
The Delaware Bridge, the Westminster Bridge, the London and Port Stanley Road, and the Road from London to the Eastern Boundary Line of the County of Middlesex, being part of the London and Brantford Road	4,500 0 0
The West Gwillimbury Road	550 0 0
*The Queenston and Grimsby Road	1,000 0 0
The Chatham Bridge	500 0 0
The Trent Bridge	750 0 0
The Chippewa Cut and Bridge, in the Township of Willoughby, County of Welland	5 0
The Dundas and Waterloo Road. Annual Rent	\$1,250 00
The Yonge Street or North Toronto Road to Holland Landing, the East York Road, including the Don Bridge and Road over same, the Dundas Street or West York Road, and the Lake Shore Road, with bridges, tolls, etc.	\$72,500 00

Since Confederation Ontario has had its own Board, Commissioner or Department of Public Works. The Joint Stock Companies Act of 1859 remains in force to-day, in an amended form. In 1874 the County Council was given authority to take over township roads with exclusive jurisdiction over the same, and was obliged to maintain all bridges over one hundred feet in width within any incorporated village. Municipal Councils could still take toll to defray the expense of making or repairing plank, macadam or gravel roads, while tolls could also be farmed out

(43) Dominion of Canada Sessional papers (1867-8), Vol. 5. No. 8, pp. 116, 170, 171, 302, 318, 319, 514, 515, 532.

*(By Act of 1863 the Town of Niagara and the Townships of Gainsborough and Caistor in the County of Lincoln were exempted from all taxation arising out of the assumption of this road by the Corporation of Lincoln County.)

for not more than twenty-one years to contracting parties. In 1889 was passed an Act to facilitate the purchase of toll roads by municipalities; a board of three commissioners was appointed to examine into this question, to ascertain the value of such roads and if possible to purchase the same. On the completion of such purchases by the county or separated urban municipality all tolls on urban or county roads were abolished while provision was made for an annual maintenance fund by the County Council. In 1893 municipal councils were authorized to agree with owners of toll roads as to the expenditure of statute labour, and in the following year toll could be commuted by abutting freeholders or occupants. In spite of the endeavours made to arrive at a satisfactory solution of the toll road question, including the appointment of a commission to examine into the matter in 1895, a few toll roads in the hands of private companies are to be found in Ontario to-day. In other directions the highway situation has greatly improved and broadened in scope. the incipient county system formed largely for the purchase of toll roads, being put upon a sound basis by the Highway Improvement Act of 1901, which is in force at the date of writing.

ACKNOWLEDGMENT.

In connection with the securing of historical data for the above sketch, the Commission desires to express its appreciation of courtesies extended by the following gentlemen:—to Dr. A. G. Doughty, Dominion Archivist, for extracts from the Public Archives of Canada relative to land and roads in this Province (1791-1842), the complete collection of which forms an appendix supplementary to the report; to Dr. Alexander Fraser, Provincial Archivist, for assistance in locating important works of reference; and to Professor O. D. Skelton, of Queen's University, for valuable suggestions with regard to the treatment of the subject.

[illegible]

TOWNSHIP ROADS—STATUTE LABOUR AND EXPENDITURES.—Continued.

Townships	Days on statute roll	Days worked out	Days commuted	Rate of commutation \$ c.	Total commutation \$ c.	No. of road divisions	No. of path- masters or supts.	Statute labour commuted	Statute labour abolished	No. of assessors	Amount paid assessors, 1913 (each)	Expenditures, roads and bridges, 1913, exclusive of Stat. Lab. Com.
Frontenac:											\$ c.	\$ c.
Barrie.....	431	337	94	1 00	300 00	24	24	no	no	1	18 50	142 59
Bedford.....	1,211	1,107	none	none	none	62	62	no	no	1	45 00	3,229 14
Clarendon & Miller.....	780	697	83	1 00	83 00	40	40	no	no	1	32 00	100 00
Hinchinbrooke.....	abolish'd		abolished					no	yes 1912	1	50 00	3,306 25
Howe Island.....	384	357	27	1 00	27 00	6	6	no	yes 1914	1	8 00	233 00
Kennebec.....			830	75	622 50	4	4	1913	no	1	40 00	182 00
Kingston.....	2,800		2,800	75	2,100 00	82	82	wholly 1912	yes 1912	1	76 50	6,175 96
Loughborough.....	2,016	none	all	60	1,209 60	16	16	wholly	yes 1910	1	100 00	2,195 74
Oden.....								no	no	1	60 00	1,587 57
Oso.....	819	685	134	1 00	134 00	43	41	no	no	1	50 00	1,150 00
Palmerston.....	637	487	150	1 50	70 00	40	35	no	no	1	45 00	161 17
Pittsburg.....	2,471	2,127	344	1 00	344 00	57	57	no	no	1	50 00	2,605 85
Portland.....									yes 1908	1	60 00	5,538 54
Storrington.....	1,320		1,320	75	1,014 00	66	66	1907	.....	1	65 00	4,900 00
Wolfe Island.....	1,915	1,762	453	1 00		55	55	none	no	1	50 00	3,537 99
Glengarry:												
Charlottenburg.....	5,014	5,014		75	3,760 00	4		wholly	wholly	1	295 00	9,665 85
Kenyon.....									no	1	90 00	3,535 22
Lancaster.....	3,633	3,537	96	.75 & 1 00	88 88	53	55	no	no			
Lochiel.....												
Grenville:												
Augusta.....	3,468	3,327	141	75	105 75	64	64		no	2	85 00	5,540 00
Edwardsburg.....												
Gower, S.....	1,035	1,068	17	75	12 75	24	24		no	1	40 00	1,126 59
Oxford-on-Rideau.....	3,908		171½	1 00	171 50	70	70	no	no	2	100 00	1,758 67
Wolford.....	2,204	1,167	1,037	.65, .75, .80	706 30	32	34	partly	no	1	60 00	230 41
Grey:												
Artemesia.....	3,200	3,150	50	.75 & 1 00	50 00	82	82	no	no	1	95 00	3,754 93
Bentlnock.....	1,650	1,500	150	1 00	150 00	4	4	no	no	1	90 00	6,300 73
Collingwood.....	4,360		492	1 00	492 00	100	100	no	no	1	95 00	10,654 10
Derby.....									yes 1902	1	75 00	4,927 19
Egremont.....	3,500	3,425	75	1 00 & 1 50	90 00	87	87	in villages	no	1	140 00	2,659 57
Euphrasia.....												
Glenelg:	2,168	2,062	17½	75	12 93	86	85	partly	no	1	90 00	4,563 66

Holland.	3,483	3,038	344	75	258 00	154	152	partly	no	2	110 00	4,306 44
Keppel.....	.....	.....	none	none	.....	4	110	no	no	1	90 00	15,800 00
Normanby.....	.....	.....	81	1 00	81 00	74	74	no	no	1	80 00	4,041 00
Osprey.....	2,237	2,156	100	1 00	100 00	96	96	no	no	1	90 00	6,142 79
Proton.....	4,000	3,900	.....	1 50	208 00	104	104	no	no	1	85 00	not known
St. Vincent.....	3,060	.....	.....	1 50	208 00	104	104	no	no	1	85 00	not known
Sarawak.....	863	420	443	1 00	443 00	20	20	partly	no	1	40 00	796 97
Sullivan.....	3,393	3,292	.....	1 00	.....	101	101	no	no	2	140 00	3,463 48
Sydenham.....	abolish'd	.....	none	.....	.....	.....	4	no	yes 1913	1	140 00	7,767 46
Haldimand:												
Canborough.....	1,285	1,080	205	75	153 75	38	38	1913	no	1	30 00	1,307 69
Cayuga, N.....	2,334	1,250	.....	1 00	.....	40	40	1912	no	1	55 00	500 00
Cayuga, S.....	728	500	228	75	171 00	24	24	partly 1912	no	1	50 00	123 27
Dunn.....	1,099½	789½	310	1 25	387 50	20	20	partly	1912	1	25 00	100 00
Moulton.....	2,273	2,066	212	1 00	212 00	72	72	partly 1912-3	no	1	50 00	600 59
Oneida.....	2,093	1,317	716	1 00	716 00	39	39	yes 1912	no	1	50 00	978 00
Rainham.....	.....	.....	509	1 00	509 00	32	32	partly 1913	no	1	35 00	500 00
Seneca.....	1,790	.....	406	1 00	406 00	64	64	1912	no	1	60 00	.....
Sherbrooke.....	1,444	444	.....	1 00	.....	8	8	.....	.....	1	20 00	420 00
Walpole.....	4,700	.....	4,700	75	3,525 00	81	81	wholly 1909	no	1	125 00	8,729 18
Haliburton:												
Anson & Hindon.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cardiff.....	424	385	39	1 00	39 00	40	40	no	no	1	25 00	35 50
Dysart.....	.....	.....	.....	.....	.....	9	18	1899	1899	1	107 00	6,987 00
Glamorgan.....	369	279	15	1 00	15 00	25	23	no	no	1	30 00	38 05
Luttreworth.....	343	295	48	1 00	48 00	34	34	no	no	1	20 00	85 00
Minden.....	631	629	62	1 00	62 00	51	51	no	no	1	42 00	300 00
Monmouth.....	1,200	.....	.....	1 00	.....	32	32	every year	no	1	50 00	.....
Sherborne.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Snowdon.....	386	357	29	1 00	26 00	23	23	no	no	1	28 00	82 24
Stanhope.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Esquesing.....	3,497	.....	3,497	1 00	3,497 00	35	35	.....	abol. 1912	2	175 00	13,406 38
Nassagaweya.....	2,440	1,659	781	1 00	770 00	57	61	partly 1912	.....	1	120 00	1,756 00
Nelson.....	.....	.....	all	75	2,779 50	.....	.....	1895	.....	1	200 00	7,217 74
Trafalgar.....	5,475	3,215	2,349	1 00	2,349 00	11	11	no	no	2	85 00	8,661 45
Hastings:												
Bangor, Wicklow & McClure	315	205	110	1 00	110 00	37	37	no	no	1	60 00	585 00
Carlow.....	553	418	135	1 00	135 00	14	14	no	no	1	35 00	375 00
Dungannon.....	520	347½	172½	1 50	258 75	44	43 & 5	no	no	1	45 00	505 27
Elzevir & Grimsthorpe.....	760	760	.....	.....	.....	41	41	no	no	2	96 00	1,025 21
Faraday.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hungerford.....	4,400	4,108	292	1 00	292 00	125	125	no	no	2	160 00	1,597 26
Huntingdon.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Limerick.....	383	.....	383	1 00	383 00	.....	.....	wholly 1911	1911	1	30 00	500 00
Madoc.....	2,200	.....	2,200	75	1,650 00	4	4	1912	1911	2	65 00	2,000 00

TOWNSHIP ROADS—STATUTE LABOUR AND EXPENDITURES.—Continued.

Townships	Days on statute roll	Days worked out	Days commuted	Rate of commutation	Total commutation	No. of road divisions	No. of path- masters or supts.	Statute labour commuted	Statute labour abolished	No. of assessors	Amount paid assessors, 1913 (each)	Expenditures, roads and bridges, 1913, exclusive of Stat. Lab. Com.
				\$ c.	\$ c.						\$ c.	\$ c.
Marmora & Lake.....	390	240	150	1 00	150 00	12	12	.....	.....	1	45 00	675 74
Mayo.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Monteagle & Herschel.....	.....	.....	.....	.....	.....	.....	.....	partly about	.....	.....	.....	.....
Rawdon.....	3,464	3,000	464	1 50	696 00	100	100	1904	no	1	80 00	1,249 45
Sidney.....	5,024	all	5,024	75	3,868 50	.....	.....	wholly	1900	2	170 00	5,649 09
Thurlow.....	4,624	3,064	1,560	65	1,014 00	85	78	1913	no	2	85 00	2,475 00
Tudor & Cashel.....	82	519½	312½	1 00	283 07	40	40	no	no	1	50 00	1,175 84
Tyendinaga.....	4,296	4,202½	93½	1 00	93 50	96	96	no	no	2	120 00	2,380 85
Wollaston.....	799	451	348	1 00	.....	38	38	no	no	1	55 00	1,120 00
Huron:												
Ashfield.....	3,453	3,297	156	75	117 00	134	134	optional	no	1	85 00	7,031 81
Colborne.....	1,801	1,705	96	1 00	96 00	70	70	no	no	1	60 00	3,598 80
Goderich.....	2,292	2,231	61	1 00	61 00	50	50	no	no	1	60 00	3,052 36
Grey.....	4,130	4,012	118	1 00	118 00	87	87	no	no	1	110 00	7,058 68
Hay.....	2,900	2,867	130	75	130 90	85	85	.....	no	1	90 00	5,914 14
Howick.....	4,204	3,722	482	60	430 30	121	121	no	.....	1	120 00	7,778 81
Hullett.....	2,797	.....	145	1 00	145 00	105	104	.....	no	1	90 00	8,694 00
McKillop.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morris.....	3,168	3,132	36	1 00	36 00	104	104	no	no	1	80 00	23,131 06
Stanley.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stephen.....	4,364	4,364	none	.....	.....	88	88	no	no	1	90 00	5,483 05
Tuckersmith.....	2,980	2,680	300	1 00	324 00	87	87	partly 1913	no	1	80 00	4,947 18
Turnberry.....	2,391	.....	.....	75	42 00	63	63	.....	no	1	65 00	8,342 82
Usborne.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wawanosh, E.....	1,792	1,726	66	1 00	66 00	76	76	no	.....	1	65 00	1,947 08
Wawanosh, W.....	1,866	1,730	132	1 00	132 00	79	79	no	no	1	65 00	3,145 54
Kent:												
Camden.....	2,964	2,833	131	1 00	131 00	75	75	.....	.....	1	65 00	5,000 00
Chatham.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dover.....	3,864	.....	3,864	40	1,434 80	66	63	wholly 1909	no	1	150 00	1,000 00
Harwich.....	5,431	4,682	749	1 00	700 00	130	130	partly	no	1	200 00	14,000 00
Howard.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orford.....	2,314	2,147	167	1 00	167 00	66	66	.....	no	1	95 00	1,934 62
Raleigh.....	3,375	3,105	270	1 00	270 00	75	75	.....	.....	1	100 00	2,350 00

Romney.....	5,355	4,727	628	50	314 00	21	21	5	1904	no	1	80 00	3,598 47
Tilbury, E. Zone.....	4,076	442	3,634	60	2,180 40	5	5				1	135 00	4,112 10
Lambton:													
Bosauquet.....	3,203	2,316	887	1 00	882 00	31	31		partly in 1913	no	1	100 00	8,793 14
Brooke.....	3,777	3,895	182	1 00	182 00	157	157		no	no	1	.....	8,493 30
Dawn.....	3,820	3,800	20	1 00	20 00	117	117		no	no	1	85 00	3,800 00
Enniskillen.....	5,415	3,188	1,227	1 00	1,227 00	76	76		partly	no	1	175 00	15,000 00
Euphemia.....	2,147	1,910	237	75	265 00	68	68			no	1	60 00	3,900 00
Moore.....	5,019	4,450	629	70	685 30	83	88		1904	no	1	125 00	4,018 64
Plympton.....	2,980	2,940	40	1 00	40 00	90	90		no	1909	1	68 00	9,094 53
Sarnia:													
Sombra.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warwick:													
Lanark:													
Bathurst.....	1,547	1,482	65	1 00	65 00	38	38		no	no	1	375 00	867 90
Beckwith.....	608	591	17	1 00	17 00	27	27		no	no	1	42 00	240 00
Burgess, N.....	1,540	1,474	66	1 00	66 00	74	74		no	no	1	50 00	1,266 50
Dalhousie & Sherbrooke, N	500	476	24	1 00	24 00	16	16		no	no	1	22 00	224 42
Darling.....	2,008	1,750	258	1 00	258 00	47	47		no	no	1	60 00	988 67
Drummond.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Elmsley, N.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lanark:													
Lavant.....	475	343	132	1 00	30 00	20	17		no	no	1	30 00	93 63
Montague.....	2,278	.....	all	75	1,708 50	4	4		wholly 1911	1911	1	75 00	1,467 22
Pakenham.....	1,549	1,354	195	1 00	195 00	42	42		no	no	1	60 00	1,772 72
Ramsay.....	2,350	2,301½	48½	1 00	48 50	54	54		no	no	1	85 00	8,500 00
Sherbrooke, S.....	700	630	70	1 00	70 00	24	24		no	no	1	35 00	65 00
Leeds:													
Bastard & Burgess, S.....	3,063	.....	3,063	75	2,297 75	5	5		wholly 1912	.....	3	105 00	48 00
Crosby, N.....	1,278	1,007	271	75	203 25	51	51		no	no	1	60 00	656 92
Crosby, S:													
Elizabethtown.....	778	482½	.....	90	.....	75	75		.....	.....	2	200 00	4,547 04
Elmsley, S.....	.....	.....	305½	88	244 40	24	24		no	no	1	25 00	527 91
Kitley.....	2,200	1,837	363	1 00	363 00	72	72		abol. 1913	abol. 1913	2	75 00	4,432 24
Leeds & Lansdowne, Front..	3,521	.....	3,521	1 00	3,521 00	5	5		no	no	2	120 00	12,619 47
Leeds & Lansdowne, Rear..	.....	.....	.....	.....	.....	11	11		wholly 1901	yes	1	100 00	5,523 38
Yonge & Lansdowne, Rear..													
Yonge & Escott, Front.....	1,488	1,150½	337½	1 00	337 50	29	29		partly since 1910	.....	1	40 30	3,283 16
Yonge & Escott, Rear.....	1,334	1,089½	244½	1 00	244 50	22	22		no	no	1	45 00	3,284 29
Lennox & Addington:													
Adolphustown.....	709	.....	all	1 00	709 00	9	9		wholly 1912	1912	1	18 00	1,150 00
Amherst Island.....													
.....	940	860	80	75	62 00	16	16		from 50c.	1912	1	25 00	900 00

TOWNSHIP ROADS—STATUTE LABOUR AND EXPENDITURES.—Continued.

Townships	Days on statute roll	Days worked out	Days commuted	Rate of commutation \$ c.	Total commutation \$ c.	No. of road divisions	No. of path- masters or supls.	Statute labour commuted	Statute labour abolished	No. of assessors	Amount paid assessors 1913 (each)	Expenditures, roads and bridges, 1913, exclusive of Stat. Lab. Com.
Camden, E.	554	453	101	1 00	101 00	48	48 & 1	no	no	1	50 00	105 24
Denbigh, Abinger.	1,910	1,838	723	90	865 46	70	70	no	no	1	80 00	5,773 20
Ernestown.	1,148	1,052	96	1 00	96 00	36	36	no	no	1	35 00	600 00
Fredericksburg, N.	870	840	307	85	261 45	20	20	along Co. Rd.	no	1	20 00	1,002 00
Fredericksburg, S.	816	766	50	1 00	816 00	51	51	no	no	1	60 00	833 75
Kaladar, Anglessea.	3,055	244	641	50	320 50	73	73	no	no	1	75 00	1,802 67
Richmond.	1,999	1,990	9	75	6 75	78	78	no	no	1	45 00	3,000 00
Sheffield.	3,200	2,000	16	1 00	16 00	113	113	no	1906	1	110 00	7,547 10
Lincoln:	3,098	1,727	1,371	75	1,028 25	40	41	yes 1913	no	1	75 00	2,000 00
Caistor.	2,908	1,627	all	80	2,181 00	2	2	1892	no	1	125 00	8,919 37
Clinton.	1,627	1,627	all	75	1,301 60	10	10	wholly 1912	no	1	106 75	3,160 82
Gainsborough.	1,027	1,027	all	75	3,244 90	4	12	wholly 1903	no	1	57 70	2,058 00
Grantham.	1,027	1,027	all	50	1,000 00	40	40	partly 1911	no	1	102 00	2,371 99
Grimsby, N.	2,241	2,241	all	1 00	572 00	59	59	1904	no	1	75 00	7,787 00
Grimsby, S.	2,241	2,241	all	85	220 00	53	53	1913	no	1	50 00	4,921 26
Louth.	2,241	2,241	all	1 00	400 00	84	84	no	no	1	85 00	5,892 00
Niagara.	2,241	2,241	all	75	1,125 00	85	85	no	no	1	130 00	5,077 72
Middlesex:	2,241	2,241	all	1 00	496 50	156	156	no	no	1	95 00	3,200 00
Adelaide.	2,241	2,241	all	1 00	1,264 00	156	156	no	no	1	100 00	5,000 00
Biddulph.	2,241	2,241	all	1 00	1,264 00	156	156	no	no	1	361 20	19,965 17
Caradoc.	2,241	2,241	all	1 00	1,264 00	156	156	no	no	1	108 30	5,241 85
Delaware.	2,241	2,241	all	1 00	1,264 00	156	156	no	no	1	59 00	4,300 00
Dorchester, N.	2,241	2,241	all	1 00	1,264 00	156	156	no	no	1	70 00	6,600 00
Ekfrid.	2,241	2,241	all	1 00	1,264 00	156	156	no	no	1	100 00	8,801 23
Lobo.	2,241	2,241	all	1 00	1,264 00	156	156	no	no	1	175 00	11,862 73
London.	2,241	2,241	all	1 00	1,264 00	156	156	no	no	1	40 00	3,414 00
McGillivray.	2,241	2,241	all	1 00	1,264 00	156	156	no	no	1	40 00	3,414 00
Metcalfe.	2,241	2,241	all	1 00	1,264 00	156	156	no	no	1	40 00	3,414 00
Mosa.	2,241	2,241	all	1 00	1,264 00	156	156	no	no	1	40 00	3,414 00
Nissouri, W.	2,241	2,241	all	1 00	1,264 00	156	156	no	no	1	40 00	3,414 00
Westminster.	2,241	2,241	all	1 00	1,264 00	156	156	no	no	1	40 00	3,414 00
Williams, E.	2,241	2,241	all	1 00	1,264 00	156	156	no	no	1	40 00	3,414 00
Williams, W.	2,241	2,241	all	1 00	1,264 00	156	156	no	no	1	40 00	3,414 00

Norfolk:									
Charlottetville.....	3,550	3,210	340	75	609 40	86	no	no	55 00
Houghton.....	1,300	1,150	150	1 00	150 00	68	partly	no	60 00
Middleton.....	3,206	.....	191½	1 00	.....	103	no	no	100 00
Townsend.....	4,770	4,330	440	1 00	.....	105	no	no	120 00
Walsingham, N.....	2,236	1,792	444	1 00	444 00	65	no	no	65 00
Walsingham, S.....	2,002	1,530¾	471½	1 00	720 50	52	no	no	75 00
Windham.....	4,194	4,005	189½	1 00	189 50	101	no	no	124 00
Woodhouse.....	2,820	2,749	71	1 00	71 00	56	no	no	100 00
Northumberland:									
Alnwick.....	880	860	20	1 00	20 00	31	no	no	42 00
Brighton.....	3,427	3,089	338	1 00	338 00	86	no	no	85 00
Cramahe.....	3,260	2,143	1,117	1 00	1,117 50	105	partly 1912	no	75 00
Haldimand.....	4,200	3,600	600	1 00	600 00	105	no	no	100 00
Hamilton.....	4,947	.....	440	75	1,135 06	77	no	no	115 00
Monaghan, S.....	1,130	1,060	70	1 00	.....	35	no	no	40 00
Murray.....	3,920	3,700	220	1 00	200 00	100	no	no	100 00
Percy.....	3,217	2,469	748	75	619 25	100	1904	no	75 00
Seymour.....	2,426	2,026	400	1 00	400 00	141	no	no	125 00
Ontario:									
Brook.....	3,583	3,013	570	1 00	480 50	122	no	no	140 00
Mara.....	2,975	2,700	275	1 00	275 00	74	no	no	125 00
Pickering.....	4,664	3,921½	739¾	1 00	739 75	78	5 vill. 1900	no	185 00
Rama.....	1,075	996	79	1 00	79 00	40	no	no	75 00
Reach.....	4,099	3,864	235	1 00	235 00	84	no	no	108 50
Scott.....	1,844	1,804¾	39½	1 00	39 25	58	no	no	100 00
Scugog.....	546	540	6	1 00	6 00	12	no	no	25 00
Thorah.....	1,822	1,408½	239	1 00	239 00	48	no	no	62 00
Uxbridge.....	2,200	2,070	130	1 00	130 00	71	no	no	90 00
Whitby, E.....	3,816	1,761	2,053	75	1,541 25	37	partly	no	100 00
Whitby.....	2,241	1,406	831	1 00	831 00	19	no	no	120 00
Oxford:									
Blandford.....	2,695	2,065½	609½	1 00	569 75	45	partly	no	60 00
Blenheim.....	5,474	3,918	1,556	.75 & 1 00	1,254 00	104	partly	no	240 00
Derham.....	6,065	4,852	1,213	1 25	1,516 00	51	no	no	175 00
Nissouri, E.....	3,086	all	100	1 00	100 00	88	no	no	70 00
Norwich, N.....	.....	.....	.....	75	2,678 00	48	wholly 1895	yes	100 00
Norwich, S.....	3,488	2,568	920	1 00	765 00	54	partly	no	75 00
Oxford, E.....	2,843	2,379	464	1 00	464 00	66	no	no	87 00
Oxford, N.....	1,571	1,354	117	1 00	.....	47	partly 1904	no	70 00
Oxford, W.....	3,231	2,711½	519½	75	460 25	36	no	no	80 00
Zorra, E.....	3,518	.....	63	1 00	63 00	85	1913	no	120 00
Zorra, W.....	.....	3,455	.....	.....	.....	85	no	no	80 00

TOWNSHIP ROADS—STATUTE LABOUR AND EXPENDITURES.—Continued.

Townships	Days on statute roll	Days worked out	Days commuted	Rate of commutation	Total commutation	No. of road divisions	No. of path- masters or supts.	Statute labour commuted	Statute labour abolished	No. of assessors	Amount paid assessors, 1913 (each)	Expenditures, roads and bridges, 1913, exclusive of Stat.Lab.Com.
Peel:												
Albion.....	2,400	1,913	487	1 00	487 00	86	86	Co. Road	no	5	100 00	4,800 00
Caledon.....	4,104	3,409	695	1 00	626 65	106	106	.....	no	2	155 00	5,721 45
Chinguacousy.....	4,011	3,096	915	1 00	915 00	81	81	about 1908	no	2	80 00	10,000 00
Toronto.....												
Toronto Gore.....												
Peterborough:												
Blanshard.....												
Downie.....												
Easthope, N.....	2,701	2,579	122	1 00	122 00	62	62	wholly	yes	1	90 00	7,338 43
Easthope, S.....	1,899	1,865 $\frac{1}{2}$	35 $\frac{1}{2}$	1 25	41 87	70	70	wholly 1902	yes 1902	1	90 00	12,035 60
Ellice.....	3,005	2,848	157	95	154 45	33	33	partly 1895	no	1	85 00	4,555 39
Elma.....	2,59 $\frac{1}{2}$	174	85	1 00	85 00	78	78	partly	no	1	60 00	2,482 48
Fullarton.....												
Hibbert.....												
Logan.....	3,158	3,158	none	1 00	none	120	120	abolished	1903	1	90 00	9,567 49
Mornington.....	2,866	2,821	45	1 00	45 00	63	63	no	no	1	95 00	7,705 59
Wallace.....												
Peterborough:												
Asphodel.....	1,728	1,678	150	1 00	150 00	20	78	no	no	1	45 00	2,100 00
Belmont & Methuen.....	1,504	1,102	none	1 00	none	96	86	no	no	1	75 00	1,551 51
Burleigh.....	514	514	none	.....	.....	25	25	.....	.....	1	49 00	730 89
Chandos.....	650	587	63	1 00	63 00	49	49	no	no	1	40 00	88 24
Douro.....	1,360	864	496	1 00	496 00	79	78	partly	.....	1	70 00	1,018 48
Dummer.....	1,813	1,532	281	1 00	.....	90	90	no	.....	1	60 00	.....
Ennismore.....	811	775	36	1 00	36 00	42	42	.....	no	1	35 00	800 00
Galway & Cavendish.....												
Harvey.....	1,200	1,100	.....	1 00	none	25	25	.....	no	1	35 00	250 00
Monaghan, N.....	2,136	.....	all	1 00	2,136 00	6	6	no	no	1	42 00	991 06
Otonabee.....	3,111	2,567	544	1 00	544 00	86	86	years ago	.....	1	70 00	1,500 00
Smith.....	3,190	2,798	392	1 00	392 00	92	87	.....	.....	1	82 00	7,359 39
Prescott:												
Alfred.....	2,048	1,964	84	1 00	84 00	45	45	1913	no	1	90 00	.....
Caldonia.....	1,770	1,695	75	1 00	75 00	72	72	no	no	1	75 00	1,146 90

Hawkesbury, E.	2,986	2,229	757	1 00	757 00	91	91	1902 & 1910	no	1	100 00	8,362 00
Hawkesbury, W.	1,500	800	all	1 00	1,500 00	20	20	all	yes	1	55 00	1,600 00
Longueuil	880	800	80	1 00	80 00	21	21	no	no	1	30 00	220 00
Plantagenet, N.	2,392	2,392	2,392	1 00	2,392 00	84	none	1913 wholly	no	1	90 00	2,392 00
Plantagenet, S.												
Prince Edward:												
Ameliasburg.	3,800	3,568	232	1 00	232 00	44	44	no	no	1	75 00	1,230 00
Athol.	2,497	2,447	494	50	24 75	31	31	no	no	1	20 00	1,448 69
Hallowell.	6,729	5,217	1,512	40	604 80	51	51	no	no	1	82 00	1,598 49
Hillier.	2,528	2,248	280	75	210 00	31	32	no	no	1	40 00	567 78
Marysburg, N.	2,602	none	2,602	50	1,301 00	23	26	1910 wholly	no	1	37 00	600 00
Marysburg, S.	1,889	1,889	410	75	308 02	33	34	no	no	1	40 00	1,412 81
Sophiasburg.	3,173	2,763		75		40	37	partly	no	1	70 00	
Renfrew:												
Admaston.	1,354					66	66			1	50 00	5,190 00
Algon a, S.	405	401	4	1 00	4 00	36	36	no	no	1	30 00	61 90
Alice & Fraser.	1,025	987	4	1 00	4 00	75	75	no	no	1	60 00	245 16
Bagot & Blythfield.						32	3		1912	1	55 00	1,682 82
Bromley.	1,212	1,006	206	75	155 00	54	54			1	60 00	2,776 62
Brougham.	204	196	8	1 00	8 00	20	20	no	no	1	30 00	none
Brudenell & Lyndoch.	712	651	27	1 00		40	40	no	no	1	65 00	125 00
Grattan.	606	568				56	56	no	no	1	40 00	250 00
Griffith & Matawatches.	250	241	9	1 00	9 00	1 to 20	20	no	no	1	40 00	bdgs. 10 00
Hagarty & Richards.	945	884	61	1 00	31 00	63	63	no	no	1	50 00	606 50
Head, Clara & Maria.												
Horton.	1,265	1,190	74	1 00	74 50	35	36					
McNab.			2,615	1 00	2,615 00	4	10	1912	1912	1	40 00	1,300 00
Pembroke.	430	374	56	1 00	56 00	7	7	no	no	1	125 00	3,547 00
Petewawa & McKay.	419	331	88	1 00	88 00	23	25			1	50 00	229 57
Radcliffe.	323	263	60	1 00		15	15			1	28 00	50 05
Raglan.	369		333	1 00		30	30			1	40 00	136 25
Rolph, Buchanan & Wylie.	606	520	146	1 00		32	32	no	no	1	25 00	43 00
Ross.	1,503	1,294	209	1 00	209 00	53	53	1907	no	1	47 50	28 00
Sebastopol.	314	283	26	1 00	26 00	26	26	no	no	1	50 00	2,785 85
Sherwood, Jones & Burns.										1	28 00	44 15
Stafford.												
Westmeath.	2,476	none	all	1 00	2,476 00	5	5	wholly	1902	1	30 00	1,300 00
Wilberforce.	1,322	1,201	121	1 00	121 00	70	70	no	no	1	100 00	2,438 39
Russell:												
Cambridge.	2,553	2,447	106	1 00	106 00	30	30		no	1	85 00	7,387 00
Clarence.	2,231	1,827	404	1 00	404 00	10	138		no	1	100 00	5,498 50
Cumberland.	4,634	3,958	676	1 00	676 00	83	83	1911	no	1	215 00	5,007 62
Russell.												

TOWNSHIP ROADS—STATUTE LABOUR AND EXPENDITURES.—Continued.

Townships	Days on statute roll	Days worked out	Days commuted	Rate of Communtation	Total communtation	No. of road divisions	No. of path- masters or supls.	Statute labour commuted	Statute labour abolished	No. of assessors	Amount paid assessors, 1913 (each)	Expenditures, roads and bridges, 1913, exclusive of Stat. Lab. Com.
Simcoe:				\$ c.	\$ c.						\$ c.	\$ c.
Adjala.....								1904	1906	1	116 00	6,000 00
Essa.....	3,586	2,524	1,062	.75 & 1 00	922 50	89	89	partly 1902	part '94-'98	1	130 00	1,653 14
Flos.....	2,512	1,889	623	.75	468 25	60	60		no	1	75 00	3,200 00
Gwillimbury, W.....												
Innisfil.....	387	333	54	1 00	54 00	20	20	no	no	1	55 00	493 38
Matchedash.....	3,115	2,265	850	.75 & 1 00	638 00	115	115	partly	no	1	135 00	4,544 05
Medonte.....	10,406	4,045	1,158	.80	926 40	147	147	no	no	1	165 00	5,168 98
Nottawasaga.....						7	7	no	1900	1	125 00	2,192 68
Orillia.....	3,658	2,900	763	1 00	763 25	121	120	partly	no	1	115 00	5,658 61
Oro.....	2,446	2,150	296	1 00	296 00	105	105					
Sunnidale.....												
Tay.....						6	6	partly 1906	1912	1	120 00	6,800 00
Tecumseh.....	4,027	3,230	797	40	318 80	63	63		no	1	145 00	2,929 20
Tiny.....	1,568	1,427	141	50	70 50	42	42			1	60 00	3,157 00
Toscorontio.....	2,375	1,834	541	1 00	541 00	85	85	Co. Rds.	no	1	128 00	5,217 29
Vespra.....												
Stormont:												
Cornwall.....	3,971	3,797	173	1 00	173 50	50	4		1911	2	\$70 & \$40	11,000 00
Finch.....	5,400	4,847	553	1 75	441 00	67	69	partly 1911	no	1	120 00	7,858 07
Osnabrock.....	4,892	4,774	118	1 00	118 00	69	73	no		2	132 00	6,226 00
Roxborough.....										1	75 00	3,000 00
Victoria:												
Bexley.....	746	634	112	1 00	112 00	32	32	no	no	1	65 00	800 00
Cardon.....	561	551	10	1 00	10 00	32	32	no	no	1	45 00	602 14
Dalton.....	411	392	none	1 00	none	23	23			1	25 00	312 70
Eldon.....	3,126	2,776	347	1 00 & .75	299 00	92	92	no	no	1	75 00	4,204 18
Emily.....	2,858	2,807	51	1 00 & 1 25	51 00	96	91	no	no	1	90 00	3,661 16
Fenelon.....	2,535	2,395	140	1 00	140 00	100	100	no	no	1	165 00	2,100 00
Laxton.....	592	503	89	1 00	89 00	42	42			1	45 00	1,200 00
Mariposa.....	5,172	4,953	219	1 00	219 00	101	101	no	no	1	100 00	6,500 00
Ops.....	3,954	2,980	377	1 00	377 50	99	99	no	no	1	85 00	1,981 34
Somerville.....	2,249	2,034	215	1 00	215 00	89	94	no	no	1	75 00	2,954 51
Verulam.....								1909	no	1	150 00	1,620 16
Dumfries, N.....	2,838	1,513	1,325	1 00	1,325 00	34	34	partly 1909		5	309 00	14,742 95
Waterloo.....	7,992	5,310	2,680	1 00	2,680 00	108	108					

Wellesley.....	4,989	4,000	989	1 00	989 00	99	99	partly 1913	no	4	190 00	10,781 00
Wilmot.....	6,342	5,293	1,049	1 00	1,049 00	76	76	partly 1909	no	3	195 00	14,976 62
Woolwich.....	4,316	2,716	1,600	1 00	1,600 00	77	77	.....	.....	6	214 00	10,900 52
Welland:												
Bertie.....	7,379	2,871	4,508	1 00	4,508 00	30	30	1913	no	1	225 00	2,460 66
Crowland.....	5,327	3,202	3,202	1 00	3,202 00	56	56	partly 1909	.....	1	120 00	6,213 26
Humberstone.....	4,278	3,261	1,017	75	762 75	69	69	no	no	1	140 00	2,308 77
Pelham.....	4,008	2,286	1,722	1 00	1,721 95	81	81	1912	.....	1	80 00	5,465 34
Stamford.....	7,660	.....	7,660	50	3,830 00	4	4	wholly 1906	yes 1914	1	200 00	6,131 38
Thorold.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wainfleet.....	4,137	3,058	1,079	1 00	1,079 00	.....	.....	partly	.....	1	75 00	2,872 79
Willoughby.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wellington:												
Arthur.....	3,306	3,250	56	1 00	56 00	115	115	no	no	1	90 00	6,134 00
Bramosa.....	2,686	2,350	336	1 00	336 00	66	66	1901	.....	1	110 00	8,667 61
Erin.....	3,825	3,525	300	1 00	300 00	125	125	1907	.....	1	120 00	3,000 00
Garafraza, W.....	2,831	2,605	226	1 00	226 00	81	81	no	.....	1	75 00	6,143 40
Guelph.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Luther, W.....	3,524 ³	3,493 ³	30 ³	1 00	30 75	73	73	.....	yes 1902	1	170 00	5,936 60
Maryborough.....	3,670	3,645	25	1 00	25 00	115	115	no	no	1	65 00	2,035 96
Minto.....	3,347	3,234 ¹	122 ¹	1 00	122 50	95	95	no	no	1	90 00	7,756 22
Nichol.....	1,857	1,648	209	1 00	209 00	60	60	no	no	1	125 00	5,254 00
Peel.....	4,874	4,854	20	1 00	20 00	113	113	no	no	1	125 00	2,336 80
Pikington.....	1,427	1,405	22	1 00	22 00	60	60	no	no	2	110 00	4,000 00
Puslinch.....	3,470	2,810	660	1 00	660 00	111	111	no	no	2	80 00	2,700 00
Wentworth:												
Ancaster.....	4,984	1,164	3,820	1 00	3,820 00	37	37	1911	.....	1	250 00	7,318 16
Barton.....	12,771	.....	12,771	30	3,831 30	7	7	1904	no	2	500 00	4,168 70
Beverly.....	4,000	3,175	814	1 00	814 00	120	120	yes	no	1	160 00	7,000 00
Binbrook.....	1,608	.....	1,608	1 00	1,608 00	28	28	wholly 1897	.....	1	50 00	1,483 79
Flamboro, E.....	2,480	.....	.....	1 00	2,480 00	.....	.....	1903	.....	2	200 00	6,520 00
Flamboro, W.....	2,485	2,049	436	1 00	436 00	50	50	no	no	1	140 00	4,599 76
Glanford.....	1,645	1,469	176	1 00	176 00	48	48	optional	no	1	65 00	1,110 00
Saltfleet.....	7,734	.....	all	50	3,867 00	5	5	years ago	.....	2	200 00	8,306 81
York:												
Etobicoke.....	4,961	1,014	3,947	1 00	3,947 00	86	86	partly	no	2	425 00	10,000 00
Georgina.....	1,987	1,837	150	1 00	150 00	43	43	.....	no	1	60 00	6,590 90
Gwillimbury, E.....	3,501	2,659	842 ¹	1 00	842 50	67	67	.....	.....	1	94 50	6,008 56
Gwillimbury, N.....	5,042	3,392	1,650	1 00	1,650 00	46	46	.....	.....	1	75 00	600 00
King.....	6,020	5,524	496	1 00	496 00	108	188	no	no	2	220 00	11,093 43
Markham.....	.....	.....	.....	.....	.....	79	79	.....	.....	2	200 00	8,355 19
Scarborough.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vaughan.....	3,949	3,450	499	75c & 1.00	398 00	90	90	partly	old system	2	190 00	16,500 00
Whitchurch.....	.....	.....	.....	1 00	33,056 77	71	71	wholly 1900	.....	4	100 00	4,286 00
York.....	.....	.....	.....	.....	.....	12	12	.....	.....	.....	2950 00	43,010 06

APPENDIX No. 12

Road Improvement and Land Values

Although it is commonly found that the highest priced farming lands are usually served with relatively better highways than lands commanding smaller prices, it has been a matter of discussion as to whether land values are affected directly by road improvement; and granted that such is the case, there has still remained the question of the expense of this relationship.

For the purpose of securing definite information on the matter, an inquiry was made throughout the Province of farmers living in sections adjacent to stretches of road recently improved under the Act to Aid in the Improvement of Public Highways.

On the forms sent out were printed the following questions:

- 1. What was the value of land per acre on your farm, or any typical farm in your neighborhood, BEFORE the adjacent road was permanently improved?
- 2. What was the value of land per acre AFTER the adjacent road was permanently improved?
- 3. What, therefore, was the INCREASE in the value of land per acre due to road improvement?
- 4. What is the present average value per acre of lands of the same farming quality which, however, are back five miles from an improved road?

The replies received are presented in tabular form, together with supplementary remarks from the various correspondents. These figures and comments, being based on the actual experience of farmers in districts where road improvement has been going on, may be considered the most definite and accurate information obtainable, and the best answer to any question that may have been entertained as to the influence of improved roads on land values.

The data is presented by counties, arranged in alphabetical order. It will be observed that inquiries were made in those counties only where road improvement has been in progress under "The Highway Improvement Act."

CARLETON COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road.
1	\$ 50	\$ 75-100	\$ 10-20	\$ 20-40
2	25	25	.....	.....
3	100	90	.....	.....
4	60	.....	.....	.....

1. Good roads certainly advance land values, especially permanently improved roads; roads that can draw a load on any day in the year, not "fair weather" roads that you cannot use in spring or fall when most needed, but stone or good gravel roads.

2. I cannot say my farm is worth any more on account of road improvement. It is light land and most of it pasture.

3. What is the use of a good road when you have to pay about one dollar every time you drive on it in tax?

4. I think myself the good roads are a fine thing, and no doubt a man living beside them and knowing the benefit would perhaps not take \$1,000 difference and go back two or three miles; but so far as the selling price is concerned, I see no difference so far. I think it would be a wise idea to spend a little money repairing the roads that are built.

FRONTENAC COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
1	\$ 36	\$ 60	\$ 24	\$ 53
2	45	50	5	40
3	40	60	20	30-35
4	49	50	.....	45
5	30	60	20	25
6	20-30	30-50-60	10-30	15

1. I think probably that farm lands in this locality command higher prices than are commonly paid for such. Convenience to the City of Kingston market is often an inducement to buyers.

2. A short piece of road that has been built by the county, of three or four miles in our township, I do not think would make any difference in the price of land, but should they keep on and build good roads leading to the main roads, I think you can count at \$5 an acre more on our land.

3. I do not believe in so much patchwork; I think there should be not less than twelve miles completed at a stretch before moving to another part.

5. The good roads system not only improves the looks of the property, but the value as well. It also facilitates the marketing of farm produce by saving of time and, in consequence, money.

6. The better the roads the more produce is raised. The farmer's sole ambition is to have good roads on which to haul his produce to market. It is poor encouragement to a farmer to produce any amount of stuff and have mud roads to be harassed with. Good roads and better roads mean more production for the farmer and more wealth to the country.

HALDIMAND COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
1	\$ 50	\$ 70-75	\$ 20-25	\$ 50

HALTON COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
1	\$ 45	\$ 50	\$ 5	\$ 45
2	.....	.....	.....	.....
3	.....	.....	.....	.....
4	40	42	25-40	40
5	.....	.....	20	60-80
6	50	70		45

1. The road is in splendid condition at present, but requires some person to look after it.

2. The assessor increased my assessment \$10 an acre this year higher than my neighbours east and west, on account of my having the benefit of the country road, which runs north. As I ship about 7,000 boxes of apples during November and December, the season of bad roads, the value to me of the good road to the station is very great.

4. There is a great deal of rough land in this neighborhood, which the good roads will not improve in price. The \$2 per acre increase is on the workable land.

6. The increase in the value of land is not all credited to good roads, but to the increase of immigration, also the influx from the west and settling in Ontario, are helps to raise the price of land here.

HASTINGS COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
1	\$ 30	\$ 40	\$ 5	\$ 40
2	50	60	10	40
3	30	40	10	30
4	25	40	15	25
5	35	60-70	30-35	40-50
6	50-60	60-70	10	.....
7	3	5	2	1

LANARK COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
1	\$ 50	\$ 55	\$ 5	\$ 40
2	40	60	20	40
3	20	15	.....	.....
4	75	.....	5	60
5	30	30	.....	30
6	55	70	15	50

1. Good roads pay, even if the value of the land does not increase, for increase of land values means increase of taxes, which inclines to counterbalance increase in land value.

2. Our whole county has been improved in value and also comfort. This summer was built one mile opposite my farm, and I can hardly tell you how I appreciate it.

4. The road was previously a toll road, so that I would not say that the road has increased the value of my land. However, the extra tax is not nearly so much as the toll amounted to formerly. Where the road was previously a mud road, I would say my farm is worth at present \$500 more per 100 acres.

5. In my opinion, I do not think the road has increased the value of the land one cent in this neighborhood. Farms lying back four or five miles from the road appear to sell just as good as the farm beside it, and I know of two cases where they sold better.

LEEDS AND GRENVILLE COUNTY.—Land Values, Per acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
1	\$ 20	\$ 20	\$	\$
2	15	0	.....	.....
3	20	24	4	18
4	8½	8½	.....	.....
5	29	35	5	3
6	45	50	5	.....
7	45	50	5	40
8	40	42	2	35
9	45	50	5	.....

8. My farm being situated near the village and always on a good road, it is hard to say whether I could get more per acre or not, but I think that any man's farm that has a good road past it is worth from \$2 to \$5 per acre more. I think it would depend a lot on the location of farm, markets, etc.

LENNOX AND ADDINGTON COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
1	\$ 50	\$ 60	\$ 10	\$ 40
2	50	60	2½	50
3	70	90-100	15-25	50

2. The county road in our vicinity is getting in a bad state. It is not much better than it was before improved. It has been improved eight years, and no work has been done on it since. If a road is not kept in good state I do not think it increases the value of our land very much.

LINCOLN COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
1	\$	\$	\$	\$
2	100	150	50	80-100
3	80	500	300	70
			possibly less	30

1. I have always lived on a good stone road, so cannot speak from experience. This much I will say, I would not live on a poor road, but would gladly pay \$25 an acre more for a farm on a stone road.

MIDDLESEX COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
	\$	\$	\$	\$
1	40-50	100-125	25-50	50-60
2	60	65	5	65
3	80	80	.....	70
4	25	40-50	15-25	.....

5. I live about half a mile from the adjacent road, but I do not think it has improved my farm any, as it is in a direction I hardly ever travel, but I suppose it would benefit some farmers that live alongside of it.

OXFORD COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
	\$	\$	\$	\$
1	60	80	20	50
2	60	60	.....	50
3	75	100	25	70
5	70-80	70-80	.....	70-80
4	70	75	5	70
6	80-100	.....	.....	5-15

2. The price is not so much on account of the roads as the distance from market. In the first place a person living five miles away from market rides, perhaps, as often and sometimes oftener than the person who may have the piece of good road running in front of his door. And, again, if the automobile business is to continue, the farm alongside of the good piece of road will depreciate in value, for neither grain nor grass can or will do anything on account of the dust that is thrown in the fields.

4. The roads are too expensive; so many favoured men. The roads are in good shape in this part of the country, but would be better if there was some way to compel the road overseer to put in correct returns to the Clerk of the Council. Some beats do their work well, while others do not. There are over 700 acres of choice lands for sale, the reason for wishing to sell being that there is no satisfactory help.

5. Land, of course, has advanced in price since five years ago. It depends a great deal upon the location of the land as well as good road when you come to buy, but I think that a good road alongside of a farm increases its value anyway \$5 per acre.

6. Our farm is situated on the old Woodstock and Norwich gravel road, that was kept in pretty good repair. Consequently there has not been as much difference in the value of farm land in our neighborhood since the building of the county as there would have been in many other places. In the east part of our township (East Oxford), where a county road is laid out (and should be built as soon as possible), it would add a great deal to the value of the land, as the road has been neglected, and is in a very bad state of repair. The automobiles have injured the county roads that have been built a great deal.

PEEL COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
	\$	\$	\$	\$
1	35	35	.....	35
2	50	55	5	50
3	40	50	10	40

3. We have practically no land in this township that is five miles from improved roads. The system is so laid out as to reach every part of the township within five miles. We find that the demand for farms adjacent to improved roads has greatly increased.

PERTH COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
1	\$ 60	\$ 75	\$ 15	\$ 60
2	55	65	10	45
3	30	30	.....	30
4	65	.....	.....	65

2. I have made an estimate on, say, the average farm. I am sorry that we have so little improved roads, as they are well worth the money that they cost, and the farmers in this section are greatly pleased for the small amount we have received.

3. The autos have taken possession of this road, and driven the horse off to other roads which are not used by autos and motorcycles. The dust after the auto and motorcycle is going to decrease the value of land lying along this road, as it covers the grass and grain with dust which, when wet with dew, makes it rust.

PRINCE EDWARD COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
1	\$ 30	\$ 30	\$	\$
2	20-30	.....	.....	30
3	30	40	10	25

3. The land would increase in value a great deal more if taxation were not so heavy and there were all improved roads.

SIMCOE COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
1	\$ 60	\$ 55	\$ 5	\$ 60
2	50-70	60-80	10	40-50
3	41	41	.....	35
4	35	35	.....	35
5	55	60	2	55
6	75	90	15	50-60

2. Owing to the North-West fever, land in this section has taken a slump. Farms a few years ago worth \$8,000 sell for \$6,500.

Also the automobiles are ruining the road. A county road built in front of my farm about six years ago, good for fifteen years of ordinary traffic, was ruined in the last two years by autos.

WATERLOO COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
	\$	\$		\$
1	50-75	50-75	.....	50-75
2	55	55	.....	.....

WELLINGTON COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
	\$	\$	\$	\$
1	30	35	5	30
2	38	41	.....	.....
3	50	55	5	40-45
4	25	50	25	40
5	75	75	.....	.....
6	60	.....	.....	45-50
7	45	.....	.....	45
8	40	60	20	.....
9	40-70	40-70	.....	.....
10	65	65	.....	60
11	60	60	.....	50
12	55-60	55-60	.....	60

6. I do not believe the road adjacent my farm is permanently improved yet. However, many people are striving to secure property along this county road, and property will steadily increase in value from this on.

WENTWORTH COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
	\$	\$	\$	\$
1	300	500	200	200
2	80	100	20	80
3	60	60	.....	.....
4	40	45-50	5-10	35

2. The greatest benefit derived from good roads is the time and labor saved in delivering produce to the markets.

3. The nearer you go to the city the higher the valuation of property, owing to the great boom in the city and gardens and real estate. Yet I believe that good farm land has increased in value alongside newly built macadamized roads.

4. The good roads system has certainly raised the value of our land, and it has also raised the taxes to almost half a fair rent for our land.

YORK COUNTY.—Land Values, Per Acre.

Correspondent	Before adjacent road improvement	After adjacent road improvement	Increase	Back five miles from an improved road
	\$	\$	\$	\$
1	100	100	.....	100
2	100	125	25	.....
3	200	200	.....	.....
4	600	800	200	.....
5	.....	.....	.....	125
6	1,300	1,700	400	.....

2. My next neighbor, before the good roads started, was asking \$8,000 for his farm, and since the good road started he asked and got it. Now the man that bought it could get \$10,000. I think this good road improvement is the best thing that ever happened the country. I think everyone is well satisfied with the road system. The only objections I have to this good roads business is that they do not itemize the cost of each.

5. The road was in a very bad state before the improvement. The advance in real estate reached here just as the road was completed, and it has advanced steadily for the last two years. It is selling at from \$15 to \$40 per foot. The road improvement has done quite a lot towards the sale of property. Four miles from here land that was selling from \$150 to \$200 per acre is now sold at \$400 per acre or just double the price asked before road improvement. This land was sold for market gardens.

6. This farm is fifty acres, and it was sold last spring for \$65,000, and has been sold again for \$85,000.

APPENDIX No. 13

Memorandum on Assessment in Ontario

Subject to certain provisions noted below, the principle of land valuation in municipal assessment for Ontario is that "land shall be assessed at its actual value" (R.S.O. 1914, c. 195, s. 40, ss. 1). The point of inquiry raised by the Commission has been as to whether or not this principle has been carried out in the actual assessing of properties. Weir, in the "Assessment Law of Ontario," page 130, interprets the law as follows:

"By 'value of land' and 'actual value' in this section is doubtless meant the market value, or the value as an asset of the owner's estate. Its actual value must, however, be measured in dollars, and is not more than what, within a reasonable time and with due care, can be realized from the sale of it. . . . Strictly speaking, the value of the land, as of any other commodity, is the price it will bring at the time it is offered for sale: *Squire qui tam v. Wilson*, 15 C. P. 284."

The Commission made particular inquiry as to whether there have been discrepancies between the assessed values of given properties and the prices which such properties bring when under sale. The data collected in this connection is to be found in the following tables which are self-explanatory.

The provisions modifying the general principle of assessing land at its actual value are here noted.

(1) Mineral, oil and gas lands shall be assessed at least at local agricultural value. Industrial income to be assessed separately. (R.S.O. 1914, c. 195, s. 40, ss. 5-9.)

(2) The value of buildings and land is to be ascertained separately and the assessment shall be the sum of values. The value of buildings shall be the amount by which the value of the land is thereby increased. If, however, buildings increase the value of the land, by less than the cost of building or replacing the same, the assessment of buildings is to be the less sum. The principle involved is that the building assessment should be the selling value of the whole property minus the selling value of the land without buildings. (R.S.O. 1914, c. 195, s. 40, ss. 3.)

(4) Toll roads not owned by municipalities, but situated therein, are to be assessed as real estate. (R.S.O. 1914, c. 195, s. 41.)

(5) Lands of public service corporations shall be assessed at actual cash selling value. (R.S.O. 1914, c. 195, s. 44, ss. 3.)

(6) Roadways of railway corporations shall be assessed at actual local value of land, but this is not to include any structures whatsoever. Structures of all kinds (exclusive of rolling stock, tunnels and bridges) on any highway, etc., not merely crossed by same, are to be assessed at actual cash selling value to a company possessing similar powers, rights and franchises. The same basis of assessment holds good for all other real property. Vacant land belonging to railways is to be assessed as other vacant land. Telephone and telegraph plants of railway companies not used commercially are non-assessable. Where used commercially the assessment is \$5.00 per mile for poles, wires, etc. (R.S.O. 1914, c. 195, s. 47, ss. 2.)

(7) Exemptions:—

(a) Railway corporations may be made exempt of all taxes, except school taxes, or may commute their assessment by virtue of municipal by-law. (R.S.O. 1914, c. 192, s. 395, 397.)

(b) Already exempted property is liable to assessment for local improvements. (R.S.O. 1914, c. 193, s. 48.)

PERCENTAGES OF SALE PRICES REPRESENTED BY ASSESSMENTS IN
COUNTIES OF ELGIN, FRONTENAC, HALTON, MIDDLESEX,
WATERLOO AND WENTWORTH.

ELGIN COUNTY.

	Number.	Sale Price.	Assessed Value.	Per cent.
Aldborough Township ...	1	\$8,500 00	\$7,000 00	82.3
	2	4,000 00	3,300 00	82.5
	3	3,200 00	2,700 00	84.3
Bayham Township	1	4,000 00	1,600 00	40.0
	2	5,250 00	3,500 00	66.6
	3	2,200 00	1,950 00	88.6
	4	6,000 00	5,100 00	85.0
	5	4,500 00	3,700 00	82.2
	6	2,600 00	2,000 00	76.9
Dunwich Township	1	2,450 00	2,000 00	81.6
	2	5,400 00	4,000 00	74.0
	3	4,200 00	4,000 00	95.2
	4	4,000 00	2,500 00	62.5
	5	4,500 00	3,700 00	82.2
	6	3,300 00	1,900 00	57.5
	7	3,400 00	3,000 00	88.2
	8	5,000 00	3,800 00	76.0
Malahide Township	1	5,100 00	3,294 00	64.5
	2	5,500 00 (1908)	3,200 00	58.1
	3	4,000 00	2,600 00	65.0
	4	11,000 00	8,000 00	72.7
	5	4,500 00	2,800 00	62.2
	6	4,700 00	2,675 00	56.9
S. Dorchester Township .	1	3,800 00	3,100 00	81.5
	2	9,500 00	8,400 00	88.4
	3	3,250 00 (1911)	3,100 00	95.0
	4	8,000 00	5,800 00	72.5
	5	9,500 00	8,400 00	88.4
	6	8,000 00	5,300 00	66.2
	7	5,060 00 (1911)	3,700 00	73.1
	8	7,000 00	5,800 00	82.8
Southwold Township	1	4,400 00	3,900 00	88.6
	2	9,000 00	6,200 00	68.8
	3	5,350 00	3,360 00	62.8
	4	6,500 00	2,600 00	40.0
	5	3,350 00	2,250 00	67.1
	6	7,500 00	2,192 00	29.2
Yarmouth Township.....	1	4,000 00	2,916 00	72.9
	2	2,500 00 (1911)	2,700 00	....
	3	4,000 00	3,250 00	81.2
	4	10,000 00	7,650 00	76.5

FRONTENAC COUNTY.

Kingston Township	1	\$4,020 00	\$2,800 00	69.0
	2	4,500 00	2,000 00	44.0
	3	1,500 00	500 00	33.0
	4	7,000 00	3,700 00	53.0
	5	30,000 00	12,000 00	40.0
	6	6,500 00	3,000 00	46.0
	7	7,700 00	3,150 00	41.0
	8	800 00	450 00	56.0
	9	12,000 00	5,500 00	42.0

FRONTENAC COUNTY.—Continued.

	Number.	Sale Price.	Assessed Value.	Per cent.
Kingston Township.—Con..	10	9,000 00	5,200 00	58.0
	11	8,000 00	4,300 00	54.0
	12	4,250 00	1,600 00	38.0
	13	2,550 00	1,100 00	43.0
	14	3,200 00	900 00	28.0
	15	15,000 00	7,000 00	47.0
	16	2,000 00	1,000 00	50.0
	17	4,600 00	1,800 00	39.0
	18	2,300 00	1,250 00	54.0
	19	3,500 00	800 00	23.0
	20	1,300 00	800 00	61.0
	21	4,000 00	1,000 00	25.0
	22	1,000 00	300 00	33.0

HALTON COUNTY—ALL TOWNSHIPS.

(Report of Judge Elliott, 1913, in appeal against Halton County By-law equalizing Assessment.)

Nassagaweya—Assessment—92%	of value shown by sales.			
Nelson,	"	51%	"	"
Esquesing,	"	51%	"	"
Trafalgar,	"	45%	"	"
Acton,	"	59%	"	"
Georgetown,	"	59%	"	"
Milton,	"	68%	"	"
Oakville,	"	84%	"	"
Burlington,	"	58%	"	"

MIDDLESEX COUNTY.

	Number.	Sale Price.	Assessed Value.	Per cent.
Adelaide Township	1	\$7,400 00	\$5,940 00	79.2
	2	8,000 00	4,500 00	56.2
	3	5,000 00	4,100 00	82.0
	4	4,500 00	2,800 00	62.2
	5	4,500 00	2,300 00	51.1
	6	2,500 00	2,800 00	....
	7	1,400 00	1,140 00	81.4
Biddulph Township	1	4,500 00	2,900 00	64.4
	2	6,000 00	4,700 00	78.3
	3	5,000 00	4,800 00	96.0
	4	3,000 00	2,300 00	76.6
	5	3,050 00*	4,700 00	....
	6	5,100 00	4,000 00	78.4
	7	5,200 00	4,100 00	78.8
	8	6,100 00	4,700 00	77.0
	9	5,000 00	6,510 00	....
	10	5,000 00	4,000 00	80.0
Dorchester North Township.	1	16,500 00	8,500 00	51.5
	2	3,800 00	4,500 00	....
	3	4,000 00	2,500 00	62.5
	4	3,000 00	3,000 00	....
	5	4,000 00	2,400 00	60.0
	6	3,400 00	2,600 00	76.4
	7	3,150 00	2,900 00	92.0
Lobo Township	1	5,000 00	4,500 00	90.0
	2	9,000 00	5,200 00	57.7
	3	8,000 00	5,900 00	73.7
	4	2,800 00	2,150 00	76.7
	5	2,500 00	2,000 00	80.0
	6	3,000 00	2,300 00	76.6
	7	3,000 00	2,000 00	66.6
	8	3,000 00	2,000 00	66.6

*\$3,250.00, buildings included.

MIDDLESEX COUNTY.—Continued.

	Number.	Sale Price.	Assessed Value.	Per cent.
London Township	1	4,500 00	4,000 00	88.8
	2	7,500 00	6,500 00	86.6
	3	1,650 00	900 00	54.5
	4	5,600 00	4,000 00	71.4
	5	6,500 00	5,700 00	87.6
	6	7,500 00	5,000 00	66.6
	7	7,500 00	5,400 00	72.0
	8	5,000 00	2,750 00	55.0
McGillivray Township ..	1	5,500 00	4,900 00	89.0
	2	7,500 00	5,200 00	68.0
	3	3,300 00	3,900 00	....
	4	4,700 00	3,400 00	72.3
	5	3,275 00	2,600 00	79.3
	6	1,250 00	700 00	56.0
	7	5,000 00	4,000 00	80.0
Nissouri West Township.	1	4,500 00	3,000 00	66.6
	2	2,700 00	2,000 00	74.0
	3	5,500 00	2,500 00	71.4
	4	5,500 00	4,300 00	78.1
	5	5,300 00	4,800 00	90.5
	6	7,200 00	5,400 00	75.0
	7	6,500 00	5,000 00	76.9
	8	3,800 00	3,000 00	78.9
	9	8,000 00	5,500 00	68.7
	10	6,250 00	5,400 00	86.4
Westminster Township ..	1	8,000 00	4,500 00	56.2
	2	11,500 00	9,000 00	78.2
	3	25,000 00	5,800 00	27.2
	4	8,000 00	6,500 00	81.2
	5	3,300 00	2,650 00	80.3
	6	5,600 00	5,500 00	80.3
	7	7,100 00	5,600 00	78.8
	8	7,800 00	6,300 00	80.7
	9	7,000 00	6,100 00	87.1
Williams East Township.	1	2,100 00	1,650 00	78.5
	2	4,500 00	3,800 00	84.4
	3	2,600 00	1,860 00	71.5
	4	2,500 00	1,550 00	62.0
	5	2,100 00	1,486 00	70.7
	6	6,300 00	3,800 00	60.3
	7	7,000 00	3,800 00	54.2
	8	2,830 00	1,550 00	54.7
	9	2,700 00	1,450 00	53.6
	10	6,500 00	3,825 00	58.8
Williams West Township.	1	3,200 00	1,525 00	47.6
	2	4,400 00	2,700 00	61.3
	3	5,200 00	3,650 00	70.1
	4	1,000 00	750 00	75.0
	5	2,500 00	1,450 00	58.0
	6	4,800 00	3,000 00	62.5
	7	1,440 00	1,100 00	76.3
	8	4,200 00	2,250 00	53.5
	9	2,300 00	1,760 00	76.5
	10	4,500 00	2,597 00	57.7
	11	5,200 00	3,100 00	59.6

WATERLOO COUNTY.

	Number.	Sale Price.	Assessed Value.	Per cent.
North Dumfries Township.	1	\$7,000 00 (1904)	\$5,600 00	80.0
	2	12,750 00	6,900 00	54.1
	3	8,000 00	7,000 00	87.5
	4	11,000 00	7,700 00	70.0
	5	9,500 00	5,050 00	53.1
Waterloo Township	1	5,300 00	5,500 00	....
	2	7,000 00	8,000 00	....
	3	4,250 00	3,000 00	70.5
	4	4,600 00	4,000 00	86.9
	5	5,000 00	4,100 00	82.0
	6	7,500 00	3,500 00	46.6
	7	4,300 00	3,100 00	
	8	2,800 00	2,400 00	85.7
	9	*4,000 00	3,400 00	85.0
	10	7,000 00	5,500 00	78.5
	11	6,500 00	4,600 00	70.7
	12	6,950 00	4,800 00	69.0
	13	7,000 00	3,400 00	48.5
	14	11,500 00	5,000 00	43.4
Wellesley Township	1	4,800 00	4,800 00	....
	2	5,850 00	5,600 00	95.7
	3	7,500 00	5,400 00	72.0
	4	9,000 00	7,900 00	87.7
	5	5,800 00	4,800 00	82.7
	6	4,700 00	4,300 00	91.6
	7	2,600 00	2,800 00	....
	8	6,250 00	5,400 00	86.4
	9	8,700 00	5,300 00	60.9
	10	3,550 00	5,600 00	....
Willmot Township	1	3,600 00	2,200 00	61.1
	2	18,000 00	11,000 00	61.1
	3	475 00	300 00	63.1
	4	6,000 00	4,400 00	73.3
	5	6,000 00	5,300 00	88.3
	6	7,000 00	4,900 00	70.0
	7	6,000 00	4,900 00	81.6
	8	14,000 00	9,500 00	67.8
	9	5,000 00	4,800 00	96.0
Woolwich Township	1	3,500 00	1,059 00	30.2
	2	9,100 00	6,164 00	67.7
	3	7,300 00	5,000 00	68.4
	4	7,300 00	5,400 00	74.9

WENTWORTH COUNTY.

Barton Township	1	\$7,000 00	\$1,200 00	17.1
	2	7,750 00	1,200 00	15.4
	3	9,500 00	1,000 00	10.5
	4	26,000 00	1,620 00	6.2
	5	32,000 00	3,650 00	11.4
	6	17,000 00	2,650 00	15.5
	7	14,000 00	900 00	6.4
	8	12,000 00	1,400 00	11.6
	9	2,700 00	900 00	33.3

*Under power of sale.

WENTWORTH COUNTY.—Continued.

	Number.	Sale Price.	Assessed Value.	Per cent.
Binbrook Township	1	3,000 00	1,000 00	33.3
	2	5,500 00	3,900 00	70.9
	3	6,000 00	4,500 00	75.0
	4	4,000 00	3,300 00	82.5
	5	6,000 00	3,200 00	53.3
	6	8,200 00	5,800 00	70.7
	7	8,500 00	5,350 00	62.9
	8	6,000 00	3,600 00	56.0
	9	5,000 00	3,750 00	75.0
	10	6,200 00	4,000 00	64.5
	11	20,000 00	7,500 00	37.5
	12	4,200 00	3,900 00	92.9
	13	12,000 00	6,500 00	50.4
	14	3,250 00	2,500 00	76.9
	15	5,000 00	1,300 00	26.0
	16	6,900 00	5,700 00	82.8
	17	2,400 00	1,900 00	79.1
	18	2,025 00	1,900 00	93.8
	19	2,100 00	1,600 00	76.2
	20	3,000 00	2,200 00	73.3
	21	675 00	550 00	81.4
	22	6,250 00	4,700 00	75.2
	23	1,800 00	1,600 00	88.8
	24	2,000 00	1,500 00	75.0
	25	3,300 00	2,900 00	87.8
	26	2,025 00	1,200 00	59.2
	27	3,000 00	2,500 00	83.3
	28	2,200 00	1,800 00	81.8
Glanford Township	1	1,700 00	1,300 00	76.4
	2	6,500 00	6,000 00	92.3
	3	7,500 00	4,200 00	56.0
	4	12,750 00	7,550 00	59.2
	5	8,000 00	4,100 00	51.2
	6	13,000 00	6,300 00	48.4
	7	7,000 00	4,000 00	57.1
	8	6,000 00	3,600 00	60.0
	9	4,000 00	1,900 00	47.5
	10	7,500 00	4,300 00	57.3
	11	6,000 00	3,900 00	65.0
	12	3,800 00	2,390 00	62.1
	13	6,500 00	6,000 00	92.3
	14	2,200 00	1,600 00	72.7
	15	2,505 00	1,600 00	63.8
	16	5,200 00	4,100 00	78.8
	17	5,200 00	4,100 00	78.8
	18	1,500 00	1,300 00	86.6
Saltfleet Township	1	9,400 00	6,500 00	69.1
	2	10,000 00	5,000 00	50.0
	3	10,000 00	6,550 00	65.5
	4	3,100 00	2,900 00	93.5
	5	17,800 00	6,885 00	32.5
	6	10,000 00	6,750 00	67.5
	7	2,900 00	700 00	24.1
	8	3,300 00	1,040 00	31.5
	9	4,200 00	3,400 00	80.9
	10	4,300 00	2,688 00	62.3
	11	3,500 00	2,640 00	76.8
	12	3,500 00	3,200 00	94.2
	13	3,250 00	2,200 00	68.0
	14	3,900 00	3,300 00	84.0
	15	1,800 00	1,500 00	83.3
	16	4,000 00	2,570 00	64.1
	17	2,900 00	2,000 00	68.9

WENTWORTH COUNTY.—Continued.

	Number.	Sale Price.	Assessed Value.	Per cent.
Saltfleet Township.—Con...	18	5,500 00	3,700 00	67.3
	19	4,400 00	2,200 00	50.0
	20	4,200 00	3,650 00	86.9
	21	5,500 00	3,700 00	67.3
	22	3,000 00	1,430 00	47.6
	23	4,800 00	3,700 00	77.0
	24	3,900 00	3,300 00	84.9
	25	4,000 00	2,500 00	62.5
	26	3,600 00	2,000 00	55.5
	27	9,000 00	5,130 00	57.0
	28	4,000 00	3,360 00	84.0
	29	5,000 00	3,000 00	60.0
	30	2,000 00	1,774 00	88.2
	31	4,500 00	2,700 00	60.0
	32	4,200 00	3,000 00	71.4
	33	6,000 00	2,700 00	45.0
	34	765 00	680 00	88.9

In the above tables are presented the sale prices and assessed values in certain specific cases of properties in various parts of the Province. The figures are based on actual records or on the testimony of witnesses in cases of appeal from the revision of assessments. The six counties from which data has been gathered are taken as fairly representative of conditions throughout the Province; especially as discrepancies between sale prices and assessed values appear to be uniformly numerous everywhere.

In illustration of the problem before the assessor, the County Council in its revision of assessment and the County Judge in his consideration of any appeals, the following paragraphs taken from the judgment in the case of an appeal of Nassagaweya Township against the Halton County by-law of June 30, 1913, equalizing the assessment, may prove of interest. In collecting evidence Judge J. W. Elliott, to whom the case was sent, heard under oath the various assessors, their testimony being in effect as follows:—

1. *James Simpson* (Nassagaweya).

[The principle he was instructed to adopt was to assess all lands in the township "at the value they would readily sell for in the market."]

This is clearly right, and if he acted conscientiously and with fair judgment, as I think he did, the result cannot be greatly quarrelled with.

2. *John L. Cotter* (Nelson).

He "valued a farm and set it down for that amount, but not which it would bring at a sale." After going over Mr. Dick's list of sales and the assessments of many properties in the township, Mr. Cotter said he thought his assessment looked like 50 per cent. of the "actual value." This estimate, I think, is a little too low.

3. *James Reid* (Divisions 4, 5 and 6, Esquesing; about one-half of the township).

[One large industry, the "Acton Tanning Co.," assessed at about 50 per cent. of its actual value. On the whole his assessment would average 65 or 70 per cent. of actual value of properties.]

Robert Joyce (Divisions 1, 2 and 3, Esquesing).

[One large industry, "The Milton P. B. and Terra Cotta Co., assessed at about 40 per cent. of its "actual value."

His total assessment of all properties in his district was about 65 per cent. of "actual value."]

4. *S. H. Albertson* (eastern part of Trafalgar).

[Did not assess at "actual value."

In 1913 tried to approach to "actual value" as set out in Assessment Act, but in 1912 assessment was about 65 per cent. of this.]

Henry Heeks (western part of Trafalgar).

[Assessment in 1912 was about 65 per cent. of "actual value" in his part of township.]

5. *John Harvey* (Acton).

[Assessed the property of Beardmore & Co. at its fixed assessment of \$30,000.00.]

This for the purposes of equalization is clearly wrong. A municipality may, for its own purposes, fix the assessment of any of its industries for a term of years at any figure below its "actual value" they please, but the assessor should assess the property, notwithstanding this, at its full assessable value so that for county purposes all properties in the county may pay for their fair share of taxation, and the figure showing the actual assessable value is required for this. The municipality where the industry is located, for its own purposes, uses of course the fixed assessment. This property, Mr. Harvey stated, should therefore have been assessed at \$50,000.00, to which was to be added the business assessment.

[With this exception, he assessed properties for, "what they would sell for under fair conditions for cash."

Numerous properties were referred to, and Mr. Harvey gave his opinion of their value at a sale. In many instances his estimate was higher than the assessment.]

6. *Alexander McDonald* (Georgetown).

He made the same error in regard to fixed assessments as Mr. Harvey, but I did not think in the case of Arnold & Sons the fixed assessment of \$5,000.00 was less than the "actual value."

The Coating Mill and the Georgetown Coating Mill, however, each fixed at \$10,000, should be \$25,000 to \$28,000 each, and to each of these there should be added a proper business assessment (which the assessor omitted) aggregating \$33,000. For county purposes this would make a substantial increase.

In other respects his assessment would appear to be about the same as Acton.

7. *R. H. Hemstreet* (Milton).

[There are no fixed assessments. The Carpet Factory and Screw Factory are exempt from taxation, excepting for school purposes, but are assessed like other properties in this respect.

In his assessment Mr. Hemstreet tried to get approximately the "actual value," keeping, however, on the safe side. His assessment on the whole, after going over Mr. Dick's list and many other properties, would be from 65 to 75 per cent. of selling price. The cheaper class of houses, however, are assessed at a higher percentage.]

8. *W. S. Savage* (Oakville).

[It is to be noted that in 1914 a new method was taken and the town was assessed by a Commission of three competent and fair-minded men appointed for such purposes.

This Commission employed valuers, made an examination of all properties, fixed their fair "actual value," and they were assessed at this amount.

In the result the assessment was raised to a figure far above preceding years.

The assessment by the Commission was	\$1,511,460
The Court of Revision reduced this by	45,765
<hr/>	
Leaving a total assessment of	\$1,465,695
To which was added a business assessment of	69,690
And income of	32,700
<hr/>	
	\$1,568,085

exceeding the assessment of 1911 by nearly half a million dollars.

In his judgment the town was assessed to a high figure. Sales might have shown more, however. Houses of working men assessed in many instances at full value.]

9. *John L. Cotter* (Burlington).

The portion annexed to the village under order of the Ontario Railway and Municipal Board of 29th April, 1909, has for twelve years from 1st of May, 1909, a fixed assessment of \$86,700, which has been increased since by buildings by \$13,600, making a total of \$100,300.

In his assessment for 1912 he left it at this figure. It should be, if assessed at "actual value," about double that amount.

After going through Mr. Dick's list and a number of other properties and comparing the prices they would readily bring at a cash sale with their respective assessments, I am forced to a conclusion that Mr. Cotter's assessment of the whole village in 1912 would not exceed 65 or 70 per cent. of the actual value, leaving out of the question the assessment of the "Annex," which I will deal with later.

... Giving the whole matter, therefore, my best consideration, hearing all that the parties before me had to say, and dealing with all the evidence as carefully and impartially as I can, I have come to the conclusion that the total assessments in the respective municipalities hereinbefore set out bear the following percentage to the "actual value," i.e., the proper assessable value in each case:—

	Per cent.
1. Nassagaweya	90
2. Nelson	60
3. Esquesing	60
4. Trafalgar	60
5. Acton	68
6. Georgetown	68
7. Milton	75
8. Oakville	90
9. Burlington	66

[He then makes an equalization by adding to the total assessments of each of the municipalities a sufficient additional percentage to bring them all up to 100 per cent. each. This works as follows:—

	Per cent.		Per cent.
1. Nassagaweya	(90)— \$1,484,418	(100)— \$ 1,649,354	
2. Nelson	(60)— 2,222,790	(100)— 3,704,650	
3. Esquesing	(60)— 2,383,049	(100)— 3,971,749	
4. Trafalgar	(60)— 2,913,710	(100)— 4,856,185	
5. Acton	(68)— 454,345	(100)— 668,155	
6. Georgetown	(68)— 524,939	(100)— 771,970	
7. Milton	(75)— 558,791	(100)— 745,055	
8. Oakville	(90)— 1,568,085	(100)— 1,742,317	
9. Burlington	(67)— 971,910	(100)— 1,472,591	
Grand total		\$19,582,026	

But the total assessment amounted to \$13,082,037, consequently the grand total above was reduced to this sum and a rateable reduction made from each municipality in proportion to their percentages.

Of "actual value" of land in the case of assessment the Judge gave as his interpretation "the price that could be readily obtained for the property at a fair sale conducted on business principles" at any time during the year.

In appearing before the Commission, Mr. Kerr, Assessor of the City of Belleville, had this to say with regard to the question of assessment:—"I think the Assessor should have a great deal of experience in the locality in which he is doing his work. I would suggest an inspector for all assessors, a Government man, and see that they do their duty. Probably it would require a great number for the Province of Ontario for instance. He would have to have some knowledge of the local localities, and I am of the opinion that a great many of the assessment rolls are copied from year to year. People have ideas of value as well as the assessor; they have to pay the money. I am of the opinion that the present Assessment Act is not lived up to. We have a good Assessment Act and laws, and if they were carried out there would not be as much grievance as there is existing to-day, and by having an inspector over us I think it would help us to toe the mark better. I had a great number of appeals before the Court of Revision the first year I was here. I am not a builder myself; never was. I got men, contractors who really did know, handling the work every day and knew values of buildings—we know the values of land very well for we get that from recent sales, but what value on buildings, or to what extent the buildings increased the value of the land, is a hard thing to come at."]

APPENDIX No. 14

Data for Chart of Farm Production

The figures upon which this chart is based are given in the following table:—

YIELD PER ACRE (BUSHELS).

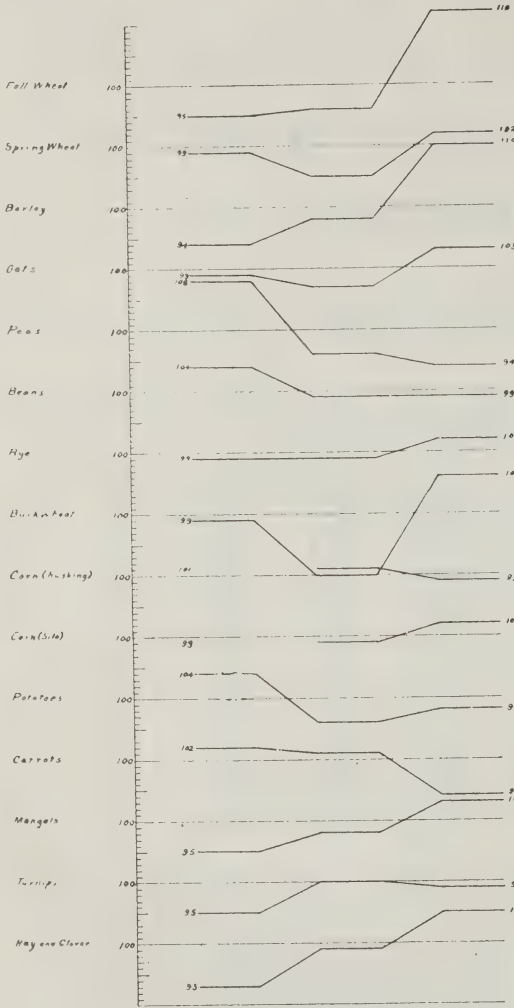
Crop.	Average 1882-1912.	Average 1882-1891.	Average 1892-1901.	Average 1902-1911.	Average 1911.	Average 1912.
Fall wheat	21.0	20.0	20.1	23.5	21.4	19.8
Spring wheat	16.0	15.8	15.2	17.9	17.2	18.7
Barley	27.8	26.0	26.3	30.5	26.3	29.7
Oats	25.6	35.1	34.6	36.6	31.6	37.8
Peas	19.2	20.8	18.5	18.1	14.7	16.6
Beans	17.2	17.9	17.0	17.1	17.4	17.0
Rye	16.4	16.2	16.2	16.7	15.8	17.4
Buckwheat	20.7	20.4	18.7	21.9	20.4	26.3
Corn (husk)	71.4	....	72.2	70.6	71.1	72.9
Corn (silo)	11.4	....	11.3	11.6	11.2	10.5
Potatoes	116.0	121.0	111.0	113.0	8.6	134.0
Carrots	343.0	351.0	348.0	322.0	254.0	273.0
Mangles	458.0	437.0	447.0	470.0	434.0	460.0
Turnips	431.0	410.0	431.0	444.0	394.0	488.0
Hay (tons)	1.5	1.4	1.5	1.5	1.3	1.6

The figures in the table show the yield per acre in bushels of the various crops opposite which they appear. For the purposes of showing variations in yield on the chart, however, it was advisable first to express these variations in terms of a common denominator. This was done by giving to the figure representing the average over the whole period, 1882-1912, a value of 100, and interpreting the figures representing the averages for each of the ten year periods in terms of this value. The resultant figures serve as index numbers, the average for the thirty year period being the base. These figures are shown in the table below:—

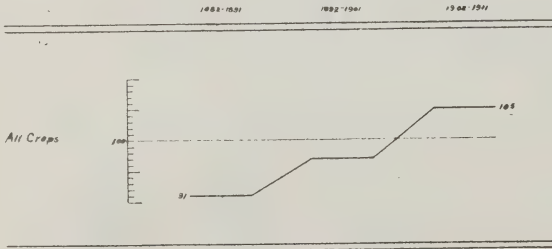
INDEX NUMBER OF YIELD PER ACRE, WITH AVERAGE YIELD 1882-1911 AS BASE.

Crop.	1882-1891.	1892-1902.	1902-1911.
Fall wheat	95.2	95.8	111.9
Spring wheat	98.8	95.0	111.9
Barley	93.5	98.2	109.8
Oats	98.5	97.2	102.7
Peas	108.3	96.3	94.3
Beans	104.0	98.8	99.4
Rye	98.8	98.8	101.8
Buckwheat	98.5	90.4	105.7

PERCENTAGES



ONTARIO : CHART OF FARM PRODUCTION :
SHOWING ADVANCE AND DECLINES IN
YIELD PER ACRE OF VARIOUS CROPS
IN THE PROVINCE AND THE INCREASE IN
YIELD FOR THE PROVINCE AS A WHOLE :



INDEX NUMBER OF YIELD PER ACRE, WITH AVERAGE YIELD 1882-1911 AS BASE.—Continued.

Crop.	1882-1891.	1892-1902.	1902-1911.
Corn (husk) . . . . .	....	101.1	98.8
Corn (silo) . . . . .	....	99.2	101.7
Potatoes	104.2	95.7	97.5
Carrots	102.2	104.4	93.9
Mangles	95.4	97.6	102.5
Turnips	95.2	100.0	99.4
Hay	92.5	99.2	105.5
All crops	90.68	96.59	104.51

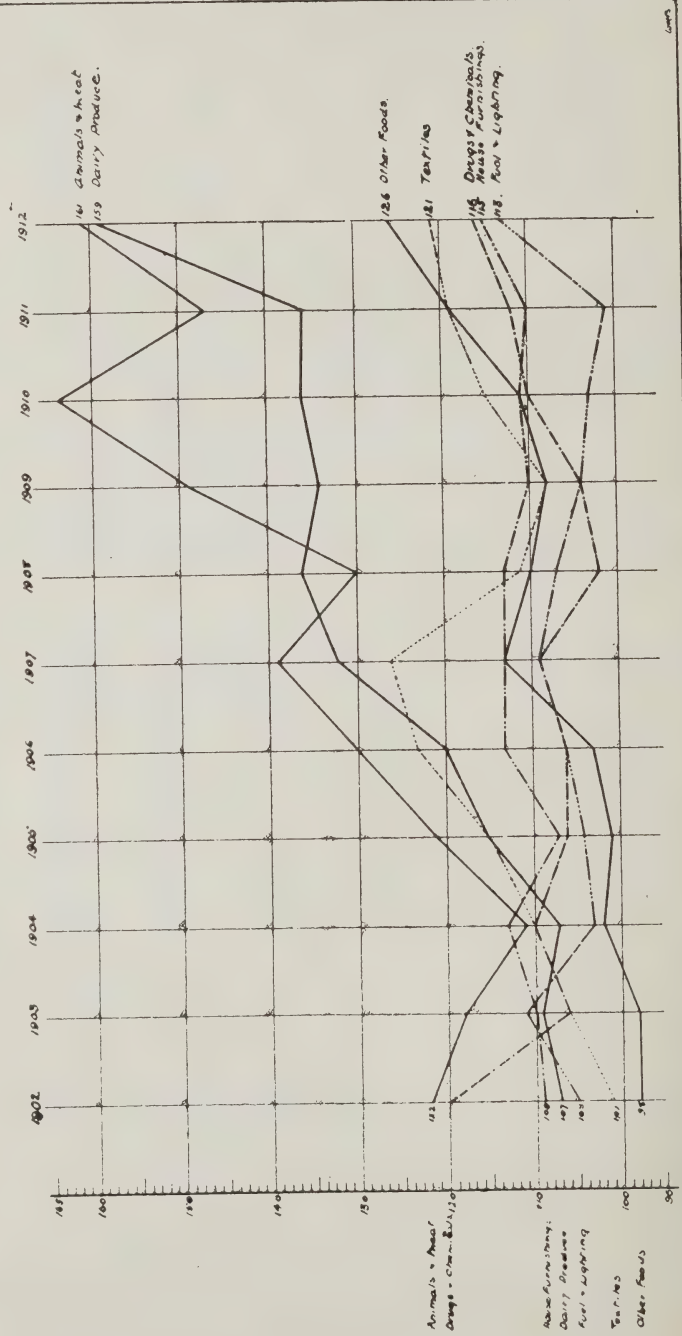
In order to determine a figure indicative of an increase or decrease in the yield per acre for the Province the index numbers of all crops in each decade were allowed a "weight" in the final "average" equal to the proportion which their acreage bore to the total acreage of all the crops mentioned. This was done in order that the increase or decrease in the yield of every acre in the Province might be reflected in the final result.

As shown in the table, the yield represented by the figures 90.68 in the period 1882-1891 rose to 96.59 in the period 1892-1901, and to 104.51 in the period 1902-1903. The inference is that of the acreage under crop from year to year the yield per acre has been increasing appreciably during the last thirty years, and that this increase in the last decade has been much greater than the increase in the previous decade.

YIELD PER ACRE OF STAPLE CROPS, ONTARIO *vs.* AMERICAN STATES, 1911.

Name.	F. wheat. Bushels.	S. wheat. Bushels.	Oats. Bushels.	Barley. Bushels.	Potatoes. Bushels.	Hay. Tons.
Ontario	21.4	17.2	31.4	26.3	86	1.28
New York	19.5	....	29.5	25.0	74	1.02
Pennsylvania	13.5	....	28.3	25.0	56	1.00
Ohio	16.0	....	32.1	27.2	65	.98
Illinois	16.0	....	28.8	28.0	50	.82
Michigan	18.0	....	28.6	24.0	94	1.16
Wisconsin	17.5	14.5	29.8	25.0	116	1.20
Iowa	19.7	13.8	25.5	21.9	74	.80
Nebraska	13.8	10.0	13.9	11.0	52	.85
Indiana	14.7	....	28.7	26.5	58	.94

Diagram showing Variations in Costs of FOODS as compared with Other Commodities in Canada
Dominion Labour Dept figures



APPENDIX No. 15

Toll Roads

TOLL ROADS.

The toll roads remaining in the Province are as follows:—

	Estimated Length.
Carleton County:	
1. The By-town and Nepean Road	8 $\frac{5}{8}$ miles.
2. The Richmond Road	7 "
3. The Nepean and North Gower Road	5 $\frac{1}{8}$ "
4. The River Branch of the Nepean and N. Gower Road	2 "
5. Hunt Club Branch of the Gloucester and Metcalfe Road	3 $\frac{5}{8}$ "
6. Gloucester and Metcalfe Road	9 $\frac{5}{8}$ "
7. The Russell Road	4 $\frac{3}{4}$ "
8. The Montreal Road	8 $\frac{1}{4}$ "
Lambton County:	
Sarnia and Florence Plank Road	11 "
Brant County:	
Brantford and Paris Road	6 "
Brantford and Oakland Road	6 "
York County:	
Holland River Road	3 "
Northumberland and Durham Counties:	
Cobourg and Port Hope Road	6 "
Cobourg and Grafton Road	5 "
Cobourg and Baltimore Road	4 "
Leeds and Grenville Counties:	
Brockville and Prescott Road	12 "
Total	100 "

It has been the general experience in Ontario, where toll roads have been acquired and afterwards maintained by townships, that they have fallen into neglect, due to the tendency in townships to try to bring all roads to a uniform standard, with a consequent result that main roads, demanding large expenditure, are starved. Should negotiations result in the purchase and improvement of these roads, it is desirable that they be retained as far as possible as portions of county systems, local, suburban or interurban.

Outside of the County of Carleton, there are now only eight toll roads in the Province, aggregating 53 miles in length. The majority of main highways in Ontario were originally constructed as toll roads, but the mileage has been steadily decreasing with the foregoing result. This has been facilitated by the Highway Improvement Act, under which toll roads have, since 1902, been acquired by the Counties of Lanark, Wentworth, Leeds, Grenville and Frontenac.

APPENDIX No. 16

Note on Report on Location of Road Material

NOTE ON REPORT ON LOCATION OF ROAD MATERIAL.

During the autumn of 1913, the Geological Survey of Canada (Federal Department of Mines) furnished the services of Mr. Leopold Reinecke of Yale University for the investigation of road materials in the province. Mr. Reinecke's "Preliminary Survey of the Materials Available for the Making of Roads in Ontario" has been received from the Director of the Geological Survey, and forms a valuable work of reference for the Commission.

This report is divided into six chapters, of which the last three deal with the location and the engineering value of the trap, felsite and gabbroic rocks (the igneous and metamorphic series), limestones and sandstones (the sedimentary series) and the gravels (unconsolidated series) of Ontario. A comparison of results obtained from the use of material of different formations according to traffic conditions is contained in these chapters, with a list of freight rates and other economic considerations that enter into the question. The minerals located by Mr. Reinecke were forwarded to the Laboratory of the United States Office of Public Roads in Washington and their value as road materials tested, as regards hardness, toughness, specific gravity, and cementing value and as to capacity of abrasion and absorption. The result of these tests are given in the individual cases, together with a list of averages derived from 3,000 minerals tested, and a chart of curves showing the relative toughness of such rocks as have a cementing value high enough to permit of their use on roads.

The conclusions of the survey are given in Chapter 1 both as to the location and value of the different series, with suggestions for future work in prospecting for stone and gravel. This chapter is followed by a summary of material suitable for country roads and contains a comparison of the effects of traffic upon gravel and macadam surfaces. The report also contains photographs of quarries and sand and gravel pits or banks, together with tables and charts of geological formations.

Acknowledgments for geological information and maps are made by Mr. Reinecke to the following Canadian authorities: Professors Coleman and Parks of the University of Toronto, Mr. M. Y. Williams of the Geological Survey of Canada and to Dr. W. G. Miller and other members of the Ontario Bureau of Mines.



A Reinforced Concrete Arch, 65 feet span, in York County, near Kleinburg.



Broken Stone Road in Frontenac County.

APPENDIX No. 17

Urban Municipalities of Ontario, Arranged in Order of Density of Population

Municipality	Acreage	Population	Population per acre	County
Newburg	3,200	494	.15	Lennox & Addington.
Holland Landing	1,834	352	.19	York.
Vienna	1,307	333	.25	Elgin.
Richmond	1,456	392	.27	Carleton.
Bayfield	1,780	504	.28	Huron.
Oil Springs	1,896	621	.33	Lambton.
Newboro'	1,073	489	.46	Leeds.
Wellington	1,500	800	.53	Prince Edward.
Wardsville	413	225	.54	Middlesex.
Hepworth	718	400	.55	Bruce.
Bradford	1,700	943	.55	Simcoe.
Lanark	1,109	722	.65	Lanark.
Iroquois	1,160	808	.70	Dundas.
Neustadt	669	483	.72	Grey.
Wroxeter	496	371	.75	Huron.
Killaloe Station	500	379	.76	Renfrew.
Thornbury	900	705	.78	Grey.
Casselman	1,200	948	.79	Russell.
Courtright	433	345	.80	Lambton.
Stayner	1 156	930	.80	Simcoe.
Cayuga	925	754	.82	Haldimand.
Tiverton	420	355	.84	Bruce.
Finch	476	421	.89	Stormont.
Bowmanville	2,919	2,633	.90	Durham.
Woodville	454	414	.91	Victoria.
Arkona	457	426	.93	Lambton.
Markdale	950	880	.93	Grey.
Newbury	500	474	.95	Middlesex.
Stirling	845	816	.97	Hastings.
Colborne	1,069	1,050	.98	Northumberland.
Shallow Lake	500	506	1.01	Grey.
Southampton	1,631	1,704	1.05	Bruce.
Arthur	994	1,075	1.08	Wellington.
Tara	500	547	1.09	Bruce.
Erin	457	512	1.10	Wellington.
Woodbridge	489	557	1.14	York.
Sandwich	2,000	2,302	1.16	Essex.
Springfield	408	477	1.17	Elgin.
Morrisburg	1,310	1,589	1.21	Dundas.
Streetsville	455	549	1.21	Peel.
Mitchell	1,400	1,696	1.21	Perth.
Wyoming	475	590	1.24	Lambton.
Tottenham	400	500	1.25	Simcoe.
Creemore	490	620	1.26	Simcoe.
Port Stanley	505	644	1.28	Elgin.
Port Rowan	500	642	1.28	Norfolk.

URBAN MUNICIPALITIES OF ONTARIO ARRANGED IN ORDER OF DENSITY OF POPULATION.—*Con.*

Municipality	Acreage	Population	Population per acre	County
Omemece	422	538	1.28	Victoria.
Ailsa Craig	445	579	1.30	Middlesex.
St. Mary's	2,683	3,555	1.33	Perth.
Theford	439	587	1.34	Lambton.
Orangeville	1,732	2,321	1.34	Dufferin.
Sutton	488	657	1.35	York.
Bolton	500	682	1.36	Peel.
Clifford	440	599	1.36	Wellington.
Strathroy	2,165	2,969	1.37	Middlesex.
Kincardine	1,900	2,631	1.38	Bruce.
Hastings	559	770	1.38	Northumberland.
Dundalk	440	607	1.38	Grey.
Beeton	475	653	1.38	Simcoe.
Lucan	500	705	1.41	Middlesex.
Petrolea	2,700	3,913	1.45	Lambton.
Bloomfield	422	615	1.46	Prince Edward.
Exeter	1,050	1,519	1.46	Huron.
Merrickville	679	997	1.47	Grenville.
Point Edward	616	907	1.48	Lambton.
Delhi	500	741	1.48	Norfolk.
Richmond Hill	475	714	1.49	York.
Blyth	448	680	1.50	Huron.
Renfrew	2,400	3,634	1.51	Renfrew.
Cobden	469	719	1.53	Renfrew.
Paisley	500	779	1.55	Bruce.
Mount Forest	1,414	2,180	1.55	Wellington.
Forest	950	1,479	1.56	Lambton.
Listowel	1,500	2,337	1.56	Perth.
Bancroft	444	698	1.57	Hastings.
Belle River	346	548	1.58	Essex.
Caledonia	547	865	1.58	Haldimand.
Rodney	467	742	1.59	Elgin.
Bath	2,277	355	1.60	Lennox & Addington.
Hensall	490	785	1.60	Huron.
Durham	950	1,526	1.61	Grey.
Dutton	500	811	1.62	Elgin.
West Lorne	493	799	1.62	Elgin.
Maxville	500	807	1.62	Glengarry.
Athens	500	817	1.63	Leeds.
Georgetown	1,062	1,732	1.63	Halton.
Milverton	470	763	1.63	Perth.
Chesterville	500	820	1.64	Dundas.
Coldwater	350	570	1.66	Simcoe.
Aurora	1,100	1,819	1.66	York.
Teeswater	474	819	1.72	Bruce.
Collingwood	4,440	7,601	1.72	Simcoe.
Ayr	500	858	1.72	Waterloo.
Waterloo	2,800	4,800	1.72	Waterloo.
Sturgeon Point	222	385	1.74	Victoria.
Westport	500	877	1.76	Leeds.
Drayton	437	774	1.77	Wellington.
Beamsville	517	919	1.78	Lincoln.
Shelburne	625	1,124	1.80	Dufferin.
Port Perry	650	1,172	1.81	Ontario.
Marmora	470	849	1.81	Hastings.
Oakville	1,303	2,362	1.81	Halton.
Fergus	850	1,552	1.83	Wellington.
Alvinston	446	820	1.84	Lambton.
Chippawa	400	746	1.86	Welland.
Palmerston	960	1,790	1.87	Wellington.
Glencoe	454	853	1.88	Middlesex.
Essex	700	1,318	1.88	Essex.
New Hamburg	950	1,790	1.88	Waterloo.
Meaford	1,500	2,886	1.93	Grey.
Thamesville	387	749	1.94	Kent.

URBAN MUNICIPALITIES OF ONTARIO ARRANGED IN ORDER OF DENSITY OF POPULATION.—*Con.*

Municipality	Acreage	Population	Population per acre	County
Harriston	866	1,684	1.95	Wellington.
Victoria Harbour	740	1,543	1.96	Simcoe.
Port Elgin	600	1,190	1.98	Bruce.
Norwood	395	788	1.99	Peterborough.
Fenelon Falls	547	1,087	1.99	Victoria.
Garden Island	77	155	2.02	Frontenac.
Elora	600	1,224	2.04	Wellington.
Trenton	1,800	3,692	2.05	Hastings.
Lucknow	500	1,051	2.10	Bruce.
North Toronto	2,500	5,271	2.10	York.
Waterdown	351	747	2.13	Wentworth.
Norwich	550	1,170	2.13	Oxford.
Fort Erie	678	1,452	2.14	Welland.
Bobcaygeon	443	931	2.15	Victoria.
Penetanguishene	1,717	3,689	2.16	Simcoe.
Markham	464	1,003	2.17	York.
Cannington	463	1,005	2.18	Ontario.
Cobourg	2,417	5,321	2.21	Northumberland.
Beaverton	458	1,007	2.21	Ontario.
Ingersoll	2,000	4,869	2.22	Oxford.
Winchester	500	1,121	2.25	Dundas.
Milbrook	360	813	2.26	Durham.
Walkerton	1,350	3,045	2.26	Bruce.
Jarvis	271	616	2.27	Haldimand.
Mimico	484	1,137	2.35	York.
Prescott	1,182	2,775	2.35	Grenville.
Tavistock	396	934	2.36	Oxford.
Waterford	463	1,110	2.40	Norfolk.
Perth	1,400	3,352	2.48	Lanark.
Madoc	424	1,030	2.43	Hastings.
Bridgeburg	678	1,671	2.47	Welland.
Brussels	422	1,054	2.50	Huron.
Clinton	903	2,265	2.52	Huron.
Barrie	2,550	6,417	2.52	Simcoe.
Tilbury	577	1,446	2.52	Kent.
Stouffville	392	1,004	2.57	York.
Dresden	642	1,652	2.57	Kent.
Parkhill	525	1,346	2.57	Middlesex.
Cardinal	450	1,164	2.59	Grenville.
Alliston	500	1,298	2.59	Simcoe.
Thorold	826	2,148	2.60	Welland.
Grand Valley	262	686	2.62	Dufferin.
Lakefield	515	1,350	2.63	Peterborough.
Brampton	1,193	3,141	2.63	Peel.
Niagara	654	1,724	2.67	Lincoln.
Port Dover	413	1,118	2.71	Norfolk.
Blenheim	490	1,332	2.73	Kent.
Chesley	583	1,726	2.79	Bruce.
Grimsby	509	1,487	2.94	Lincoln.
Preston	1,300	3,831	2.95	Waterloo.
Watford	400	1,198	2.97	Lambton.
Gananoque	1,237	3,708	3.01	Leeds.
Warton	756	2,722	3.02	Bruce.
Hagersville	349	1,050	3.02	Haldimand.
Chatsworth	122	372	3.06	Grey.
Oshawa	2,400	7,417	3.10	Ontario.
Uxbridge	500	1,567	3.12	Ontario.
Burlington	553	1,725	3.13	Halton.
Newcastle	1,929	604	3.14	Durham.
Bothwell	231	755	3.26	Kent.
Tweed	398	1,300	3.27	Hastings.
Leamington	815	2,681	3.29	Essex.
Dunnville	938	3,146	3.35	Haldimand.

URBAN MUNICIPALITIES OF ONTARIO ARRANGED IN ORDER OF DENSITY OF POPULATION.—*Con.*

Municipality	Acreage	Population	Population per acre	County
Kemptville	359	1,209	3.37	Grenville.
Ridgetown	621	2,120	3.42	Kent.
Almonte	700	2,517	3.59	Lanark.
Arnprior	1,121	4,164	3.71	Renfrew.
Kingsville	446	1,684	3.79	Essex.
Deseronto	530	2,005	3.79	Hastings.
Acton	429	1,627	3.80	Halton.
Aylmer	549	2,084	3.81	Elgin.
Eganville	310	1,180	3.81	Renfrew.
Wingham	650	2,481	3.82	Huron.
Weston	450	1,728	3.85	York.
Embro	1,247	481	3.85	Oxford.
Seaforth	550	2,130	3.86	Huron.
Merrittton	450	1,767	3.93	Lincoln.
Havelock	360	1,407	3.93	Peterborough.
Orillia	1,600	6,478	4.05	Simcoe.
Milton	400	1,665	4.17	Halton.
Elmira	433	1,811	4.18	Waterloo.
Eastview	669	2,789	4.18	Carleton.
Owen Sound	2,909	12,383	4.25	Grey.
Portsmouth	155	660	4.27	Frontenac.
Welland	1,200	5,128	4.28	Welland.
Port Hope	1,089	4,795	4.41	Durham.
Napanee	600	2,690	4.50	Lennox & Addington.
Lancaster	130	588	4.53	Glengarry.
Simcoe	794	3,610	4.55	Norfolk.
Rockland	700	3,199	4.58	Russell.
Newmarket	725	3,396	4.58	York.
Guelph	3,200	15,107	4.73	Wellington.
Goderich	1,000	4,795	4.79	Huron.
Lindsay	1,550	7,414	4.80	Victoria.
Brighton	2,706	1,306	4.83	Northumberland.
Berlin	3,095	15,338	4.96	Waterloo.
Hanover	520	2,640	5.08	Grey.
Stratford	2,835	14,596	5.15	Perth.
Campbellford	600	3,197	5.32	Northumberland.
St. Catharines	2,400	13,403	5.59	Lincoln.
Paris	760	4,278	5.62	Brant.
Alexandria	400	2,253	5.65	Glengarry.
Hespeler	472	2,574	5.80	Waterloo.
Port Colborne	253	1,472	5.82	Welland.
Smith's Falls	1,030	6,146	5.95	Lanark.
Whitby	3,800	2,279	6.00	Ontario.
Port Dalhousie	187	1,123	6.03	Lincoln.
Belleville	1,700	10,440	6.14	Hastings.
Wallaceburg	577	3,581	6.24	Kent.
Pictou	552	3,456	6.27	Prince Edward.
Chatham	1,650	10,463	6.35	Kent.
Niagara Falls	1,414	9,004	6.38	Welland.
Sarnia	1,450	9,459	6.53	Lambton.
Carleton Place	550	3,617	6.58	Lanark.
Woodstock	1,529	10,091	6.61	Oxford.
Peterboro'	2,808	19,300	6.88	Peterborough.
Amherstburg	358	2,492	6.96	Essex.
Galt	1,477	10,333	7.02	Waterloo.
Midland	582	4,238	7.28	Simcoe.
Brockville	1,242	9,239	7.51	Leeds.
Dundas	550	4,141	7.52	Wentworth.
Walkerville	436	3,349	7.68	Essex.

URBAN MUNICIPALITIES OF ONTARIO ARRANGED IN ORDER OF DENSITY OF POPULATION.—*Con.*

Municipality	Acreage	Population	Population per acre	County
Brantford	2,957	24,084	8.14	Brant.
Kingston	2,300	18,828	8.20	Frontenac.
St. Thomas	1,800	15,240	8.49	Elgin.
Pembroke	607	5,382	8.89	Renfrew.
Windsor	2,020	18,220	9.10	Essex.
Cornwall	680	6,268	9.22	Stormont.
London	4,478	48,123	10.80	Middlesex.
Hamilton	6,260	82,095	13.15	Wentworth.
Ottawa	5,089	90,520	17.82	Carleton.
Toronto	17,920	374,666	20.90	York.

APPENDIX No. 18:—TOWNSHIP ROAD EXPENDITURES, 1900, 1905, 1910.

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1900

Township Municipality	Assessed area in acres	Assessed population, 1900	Total values assessed, 1900	Total municipal and school taxes 1900		Total expend- iture on roads and bridges, 1900	Mills on \$	Total tax head imposed per	Mill rate for roads and bridges expenditure	Roads and bridges ex- penditure per head
				Imposed	Received					
	Acres		\$	\$	\$	\$		\$ c.		\$ c.
Brant:		5,342	3,751,041	24,642	24,950	4,183	6.6	4 61	1.1	75
Brantford.....	71,680							4 65	2.5	30
Burford.....	66,566	4,266	2,195,820	19,831	19,773	5,530	9.0	5 27	.8	72
Dumfries, S.....	46,670	2,570	2,314,892	13,536	13,543	1,842	5.8	4 92	.4	24
Oakland.....	10,364	685	395,780	3,372	3,330	1,165	8.5	4 53	1.9	18
Onondaga.....	20,564	1,108	704,301	5,072	5,173	1,311	7.2			
Bruce:										
Albemarle.....	55,128	1,335	175,719	4,190	4,573	792	23.4	3 08	4.5	59
Amabel.....	64,228	3,250	634,180	10,799	8,296	1,646	17.0	3 34	2.6	51
Arran.....	54,102	2,517	1,450,920	8,623	8,873	1,248	5.9	3 43	.9	49
Brant.....	69,598	3,991	1,987,325	17,281	16,271	8,344	8.7	4 33	4.2	209
Bruce.....	67,471	2,960	1,385,435	13,003	11,988	3,886	9.4	4 39	2.8	31
Carrick.....	59,498	4,447	2,088,529	14,213	14,212	1,359	6.8	3 20	.6	30
Culross.....	56,756	3,007	1,721,650	9,659	9,797	1,329	5.6	3 21	.8	44
Eastnor.....	50,041	1,512	324,436	4,751	5,623	998	14.6	3 14	3.1	66
Elderslie.....	54,418	2,248	1,292,080	10,034	10,056	2,443	7.8	4 46	1.9	109
Greenock.....	64,839	2,738	1,400,315	10,413	10,062	2,854	7.4	3 80	2.0	104
Huron.....	57,442	3,308	1,497,926	15,669	14,909	5,499	10.5	4 74	3.7	166
Kincardine.....	59,200	2,986	1,561,420	11,075	10,579	2,942	7.1	3 71	1.9	99
Kinloss.....	46,275	2,264	1,139,585	7,865	8,171	1,768	6.9	3 47	1.6	78
Lindsay & St. Edmunds.....	106,159	989	98,324	3,470	4,506	960	35.3	3 51	9.8	97
Saugeen.....	36,059	1,391	840,270	5,676	5,678	1,576	6.8	4 08	1.9	113
Carleton:										
Fitzroy.....	60,187	2,400	762,367	10,269	11,702	2,176	13.5	4 28	2.9	91
Gloucester.....	84,972	6,118	1,414,000	21,722	20,765	3,568	15.4	3 55	2.5	58
Goulbourn.....	65,125	2,517	839,350	9,139	10,587	1,515	10.9	3 63	1.8	60
Gower, N.....	33,218	2,115	884,500	7,891	9,794	982	8.9	3 73	1.1	46
Huntley.....	61,869	2,142	450,940	7,087	7,668	1,345	15.7	3 31	3.0	63
March.....	28,029	1,127	366,756	3,336	3,133	408	9.1	2 96	1.1	36
Marlborough.....	56,971	1,541	456,665	4,838	4,341	373	10.6	3 14	.8	24
Nepean.....	57,908	4,809	2,305,461	17,016	16,828	2,171	7.4	3 54	.9	45
Osgoode.....	91,170	4,699	1,524,825	16,976	16,029	3,378	11.1	3 61	2.2	72
Toronto.....	29,067	860	143,700	3,118	2,636	316	21.7	3 63	2.2	37
Dufferin:										
Amaranth.....	63,433	2,575	1,071,760	15,473	17,012	1,463	14.4	6 01	1.4	57
Garrafraxa, E.....	40,661	1,807	1,119,350	10,521	10,531	2,849	9.4	5 83	2.5	1

Luther, E.	38,037	1,579	561,015	8,593	8,590	878	15.3	5.44	1.6
Melancthon.	74,615	3,251	825,076	12,421	13,681	1,607	15.1	3.82	1.9
Mono.	69,136	3,133	1,592,905	12,146	12,849	1,671	7.6	3.88	1.0
Mulmur.	70,221	2,910	1,301,325	12,669	14,336	1,629	9.7	4.35	1.3
Dundas:									
Matilda.	62,602	3,845	1,336,336	18,810	21,829	2,055	14.1	4.89	1.5
Mountain.	56,648	3,311	1,343,648	13,156	12,220	3,341	9.8	3.97	2.5
Williamsburg.	59,689	3,725	1,464,742	16,825	16,832	4,207	11.5	4.52	2.9
Winchester.	57,048	3,141	1,341,535	21,417	22,745	4,027	16.0	6.82	3.0
Durham:									
Cartwright.	37,412	1,748	725,520	5,125	6,961	658	7.1	2.93	.9
Cavan.	62,596	2,643	1,556,675	10,637	10,852	1,840	6.8	4.02	1.2
Clarke.	68,252	3,705	1,798,405	15,401	14,053	1,981	8.6	4.16	1.1
Darlington.	68,586	4,102	2,411,425	18,822	17,251	3,557	7.8	4.59	1.5
Hope.	63,918	3,268	2,288,182	10,668	11,028	1,726	4.7	3.26	.8
Manvers.	69,645	2,860	1,219,240	10,363	11,221	1,916	8.5	3.62	1.6
Elgin:									
Aldborough:	74,886	4,488	1,666,310	25,910	28,279	5,256	15.5	5.77	3.2
Bayham.	56,498	3,496	1,067,775	18,790	17,634	4,054	17.6	5.37	3.8
Dorchester, S.	30,558	1,474	1,065,790	10,646	11,152	1,860	10.0	7.22	1.7
Dunwich.	69,331	3,197	1,736,495	22,169	20,198	6,024	12.8	6.93	3.5
Malahide.	62,353	3,715	1,920,610	24,319	24,761	7,207	12.7	6.55	3.8
Southwold.	72,575	3,703	2,493,528	23,727	23,534	6,288	9.5	6.41	2.5
Yarmouth.	69,595	4,720	2,682,087	28,025	27,266	12,369	10.4	5.94	4.6
Essex:									
Anderdon.	22,925	1,906	630,045	8,707	9,376	1,736	13.8	4.57	2.7
Colchester, N.	30,612	1,848	597,363	14,274	15,563	2,064	23.9	7.72	3.5
Colchester, S.	34,480	2,761	1,007,318	17,837	18,410	2,572	17.7	6.46	2.6
Gosfield, N.	28,013	1,969	738,405	11,293	12,217	716	15.3	5.74	1.0
Gosfield, S.	30,038	2,369	1,040,895	14,895	16,125	1,664	14.3	6.29	1.6
Maidstone.	44,547	2,846	806,970	17,082	17,558	2,408	21.2	6.00	3.0
Malden.	20,962	1,290	713,045	7,062	7,785	2,134	9.9	5.47	3.0
Mersea.	62,025	4,172	1,807,226	28,742	30,862	3,588	15.9	6.89	2.0
Rochester.	32,392	2,550	948,205	11,189	11,477	1,164	11.8	4.39	1.2
Sandwich, E.	18,717	2,238	628,895	13,448	13,853	1,354	21.4	6.01	2.2
Sandwich, S.	23,532	1,633	588,618	10,691	11,695	1,485	18.2	6.55	2.5
Sandwich, W.	23,338	2,476	687,406	13,440	12,710	3,184	19.6	5.43	4.6
Tilbury, N.	26,743	2,048	646,710	11,663	11,272	888	18.0	5.69	1.4
Tilbury, W.	22,955	2,160	636,125	16,096	15,221	1,203	25.3	7.45	1.9
(Peelee Island.	9,787	620	283,602	7,552	8,716	931	26.6	12.18	3.2
Frontenac:									
Barrie.	24,442	521	40,012	1,470	1,416	26	36.7	2.82	.6
Bedford.	63,886	1,446	179,163	5,230	5,427	503	29.2	3.62	2.8
Clarendon & Miller.	46,064	1,874	79,607	2,241	2,543	96	28.2	2.56	1.2
Hinchinbrooke.	68,929	1,219	189,916	4,758	5,439	972	25.1	3.90	5.1

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1900—Continued.

Township Municipality	Assessed area in acres	Assessed population, 1900	Total values assessed, 1900	Total municipal and school taxes 1900		Total expend- iture on roads and bridges, 1900	Mills on \$	Total tax imposed per head	Mill rate for roads and bridges expenditure	Roads and bridges ex- penditure per head
				Imposed	Received					
			\$	\$	\$	\$	\$	% c.		% c.
Howe Island.....	8,025	342	52,755	1,480	1,661	59	28.1	4.33	1.1	17
Kenebec.....	40,278	1,363	90,886	2,753	3,169	250	30.3	2.02	2.8	18
Kingston.....	51,831	2,480	1,089,986	14,078	14,463	1,319	12.9	5.68	1.2	53
Loughborough.....	50,509	1,688	383,452	7,463	7,836	781	19.5	4.42	2.0	46
Oden.....	51,569	976	109,779	4,119	4,251	220	37.5	4.22	2.0	23
Oso.....	42,411	969	91,688	3,540	3,826	179	38.6	3.65	2.0	18
Palmerston & Canonto.....	55,155	1,076	64,366	2,265	2,237	189	35.2	2.11	2.3	18
Pittsburg.....	48,156	2,106	810,663	12,800	12,437	3,376	15.9	6.11	4.2	160
Portland.....	52,958	2,147	462,308	8,509	8,981	942	18.4	3.96	2.0	44
Storrington.....	56,005	1,726	417,705	8,593	8,182	487	20.6	4.98	1.1	28
Wolfe Island.....	30,768	1,606	595,400	8,308	9,280	360	14.0	5.17	.6	22
Glengarry:										
Charlottenburg.....	78,600	4,817	1,178,960	16,953	16,388	1,016	14.4	3.52	.9	21
Kenyon.....	78,610	3,866	739,410	10,961	10,563	1,929	14.8	2.84	2.6	52
Lancaster.....	57,101	3,533	923,883	10,605	10,356	1,753	11.5	3.00	1.9	50
Lochiel.....	71,459	4,391	1,002,075	11,537	11,509	1,177	11.5	2.63	1.2	27
Grenville:										
Angusta.....	74,572	3,649	1,299,860	12,570	10,665	1,443	9.7	3.44	1.1	40
Edwardsburg.....	69,538	3,784	1,169,375	12,497	12,712	1,701	10.7	3.30	1.5	45
Gower, S.....	21,736	790	315,480	2,682	2,299	292	8.5	3.39	.9	37
Oxford-on-Rideau.....	59,058	2,735	787,535	9,557	8,573	936	12.1	3.49	1.2	34
Wolford.....	46,428	1,694	936,754	6,379	6,256	436	6.8	3.77	.5	26
Grey:										
Artemesia.....	69,015	3,495	1,023,300	13,110	13,362	3,083	12.8	3.75	3.0	88
Bentnek.....	73,613	3,284	1,088,020	11,929	12,899	2,957	11.0	3.63	2.7	90
Collingwood.....	68,000	3,636	1,378,016	16,024	16,267	3,245	11.6	4.41	2.4	89
Derby.....	40,236	1,886	776,250	7,652	7,654	2,342	9.9	4.06	3.0	24
Egremont.....	72,685	3,190	1,543,130	12,103	12,049	2,476	7.8	3.79	.3	15
Euphrasia.....	72,000	3,241	1,268,465	11,285	14,097	2,165	8.9	3.48	1.7	67
Glencelg.....	67,611	2,733	664,547	8,801	8,751	2,439	13.2	3.22	3.7	89
Holland.....	68,192	3,127	783,215	8,107	8,423	2,859	10.4	2.59	1.1	27
Keppel.....	89,298	3,563	697,235	11,352	11,626	2,873	16.3	3.19	4.1	81
Normanby.....	68,144	4,412	1,475,135	14,244	14,112	2,229	9.7	3.23	1.5	51
Osprey.....	70,669	3,033	830,570	9,009	11,030	1,337	10.8	2.97	1.6	44
Proton.....	80,107	2,978	833,175	9,870	10,224	1,358	11.8	3.31	1.6	46

St. Vincent.....	63,340	2,811	1,389,320	12,419	12,690	2,542	8.9	4.42	1.8	90
Sarawak.....	10,922	1,251	253,979	4,476	4,567	867	17.6	3.58	3.4	69
Sullivan.....	73,630	3,239	1,103,925	10,646	10,668	1,325	9.1	3.23	1.1	40
Sydenham.....	73,207	3,400	1,192,800	13,086	13,021	4,014	11.0	3.85	3.4	1 18
Haldimand:										
Canborough.....	21,454	914	353,007	3,829	3,868	355	10.8	4.19	1.0	39
Cayuga, N.....	32,742	1,515	732,409	5,762	5,650	637	7.9	3.80	.9	42
Cayuga, S.....	13,261	770	394,900	2,602	2,370	37	6.6	3.38	.1	05
Dunn.....	14,858	826	397,770	3,365	3,361	229	8.5	4.07	.6	28
Moulton.....	27,000	1,818	591,880	3,981	5,326	368	10.1	3.29	.2	20
Oneida.....	32,577	1,466	948,810	6,844	6,979	2,458	7.2	4.67	2.5	1 68
Rainham.....	25,659	1,639	543,200	6,349	6,346	1,951	11.7	3.87	3.6	1 19
Seneca.....	41,746	1,815	884,900	8,296	8,289	1,142	9.4	4.57	1.3	63
Sherbrooke.....	4,680	383	151,346	1,341	1,300	114	8.9	3.50	.8	30
Walpole.....	6,652	4,186	1,949,860	19,687	19,678	3,356	10.1	4.70	1.7	85
Haliburton:										
Anson & Hindon.....	12,892	279	35,149	935	967	107	26.6	3.35	3.0	38
Cardiff.....	25,287	590	33,893	2,475	2,127	64	73.0	4.19	1.9	11
Dysart & Guilford.....	366,522	990	133,303	4,854	4,917	1,635	36.4	4.90	12.3	1 65
Glanorgan.....	20,333	475	43,513	1,352	1,336	87	31.1	2.85	2.0	18
Lutterworth.....	23,834	424	35,903	1,368	1,618	126	38.1	3.23	3.5	30
Minden.....	36,566	1,166	85,540	3,376	4,037	379	39.5	2.89	4.4	33
Monmouth.....	25,013	508	30,579	2,227	1,913	8	72.8	4.38	.3	02
Sherborne & McClintock.....	10,116	214	19,198	745	424	564	38.8	3.48	29.4	2 64
Snowdon.....	33,016	726	69,451	3,249	3,034	166	46.8	4.48	2.4	23
Stanhope.....	15,704	486	24,501	1,251	1,734	142	51.1	2.57	5.8	29
Halton:										
Esquesing.....	67,217	3,718	2,288,280	16,285	16,695	5,408	7.1	4.38	2.4	1 45
Nassagaweya.....	44,795	2,274	1,005,735	8,376	11,501	2,138	7.5	3.30	2.1	94
Nelson.....	46,346	2,685	1,774,120	11,652	11,501	3,286	6.6	4.34	1.9	1 22
Trafalgar.....	66,984	3,405	2,464,304	15,428	15,153	4,198	6.3	4.53	1.7	1 23
Hastings:										
Bangor, Wicklow & McClure.....	33,716	1,013	41,542	2,075	1,620	286	49.9	2.05	6.9	28
Carlow.....	22,062	611	49,790	1,757	1,273	289	35.3	2.88	5.8	47
Dungannon.....	33,941	682	49,599	2,373	2,524	211	47.8	3.48	3.1	31
Elzevir and Grimsborpe.....	64,555	1,296	97,552	3,468	3,872	669	35.6	2.68	6.9	54
Faraday.....	48,657	1,032	79,590	3,112	3,010	354	39.1	3.02	4.4	34
Hungerford.....	93,380	3,492	743,465	11,567	13,358	1,009	15.6	3.31	1.4	29
Huntingdon.....	53,849	2,462	431,397	7,133	8,149	266	16.5	2.89	.6	11
Limerick.....	44,443	558	54,303	1,186	1,046	353	21.8	2.13	6.5	63
Madoc.....	67,747	2,652	491,675	10,459	13,116	378	21.3	3.94	.8	14
Marmora & Lake.....	103,517	1,887	305,778	7,897	9,126	1,122	25.8	4.21	3.7	60
Mayo.....	19,035	557	27,140	1,411	1,390	279	52.0	2.53	10.3	50
Monteagle & Herschel.....	67,052	1,813	70,949	3,101	2,583	261	43.7	1.71	3.7	14
Rawdon.....	66,129	3,143	1,180,220	12,772	13,783	785	10.8	4.06	.6	22

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1900—Continued.

Township Municipality	Assessed area in acres	Assessed population, 1900	Total values assessed, 1900	Total municipal and school taxes 1900		Total expend- iture on roads and bridges, 1900	Mills on \$	Total tax imposed per head	Mill rate for roads and bridges	Roads and bridges ex- penditure per head
				Imposed	Received					
			\$	\$	\$	\$		\$ c.		\$ c.
Sidney	69,577	3,973	2,049,540	19,818	20,468	2,314	9.7	4 99	1.1	58
Thurlow	53,458	4,194	1,920,400	17,512	18,083	1,451	9.1	4 18	.8	35
Tudor & Cashel	59,952	8,843	67,008	2,576	2,651	581	38.4	3 06	8.7	69
Tyendinaga	77,048	3,734	1,416,210	16,651	15,299	878	11.8	4 46	.6	24
Wollaston	52,391	722	64,105	2,219	2,105	451	34.6	3 07	7.0	62
Huron:										
Ashtfield	63,871	3,176	1,684,445	13,522	14,408	3,969	8.0	4 26	2.4	1 25
Colborne	34,083	1,802	1,077,200	7,251	6,918	2,035	6.7	4 02	1.9	1 13
Goderich	52,307	2,413	1,486,400	9,481	10,202	2,418	6.4	3 93	1.6	1 00
Grey	64,778	3,389	1,728,400	12,979	12,946	2,531	7.5	3 83	1.5	75
Hay	52,501	3,452	1,789,860	13,373	13,124	3,049	7.5	3 87	1.7	88
Howick	67,575	3,781	2,144,275	13,979	15,856	2,566	6.5	3 70	1.2	68
Hullett	53,558	2,838	1,966,210	12,387	12,302	3,307	6.3	4 36	1.7	1 17
McKillop	52,110	2,653	2,000,700	11,261	11,316	4,286	5.6	4 24	2.1	1 62
Morris	55,090	2,485	1,745,285	8,943	10,481	1,496	5.1	3 60	.9	60
Stanley	43,313	2,146	1,665,755	9,477	9,377	2,518	5.7	4 42	1.5	1 17
Stephen	56,771	4,098	1,802,405	14,308	14,308	2,955	8.0	3 49	1.6	72
Tuckersmith	40,738	2,457	1,961,835	10,764	10,938	4,123	5.5	4 38	2.1	1 68
Turnberry	35,638	2,161	1,232,780	7,482	7,425	1,051	6.1	3 46	.9	49
Usborne	42,678	2,326	1,809,575	11,116	11,106	2,809	6.1	4 78	1.6	1 21
Wawanosh, E.	41,734	1,941	1,427,960	6,649	6,798	1,254	4.7	3 43	.9	65
Wawanosh, W.	41,696	2,055	1,123,500	7,889	8,790	1,430	7.0	3 84	1.3	70
Kent:										
Camden	40,705	2,523	1,015,140	15,060	16,009	3,624	14.8	5 97	3.6	1 44
Chatham	84,480	5,099	1,991,639	41,863	42,413	3,433	21.0	8 21	1.7	67
Dover	68,058	4,234	1,740,724	29,083	38,685	658	16.7	6 87	.4	16
Harwich	88,308	4,503	3,676,571	28,010	30,304	4,417	7.6	6 22	1.2	98
Howard	58,449	3,504	2,451,060	19,979	21,451	3,126	8.2	5 70	1.3	89
Orford	49,605	2,764	1,430,280	15,749	15,583	2,584	11.0	5 70	1.8	93
Raleigh	71,369	4,499	2,494,721	33,243	34,580	2,185	13.3	7 39	.9	49
Romney	26,397	1,850	746,813	17,426	15,345	1,122	23.3	9 42	1.6	66
Tilbury, E.	54,711	3,329	1,510,725	30,182	28,968	2,395	20.0	9 07	1.6	72
Zone	25,167	1,197	599,520	6,430	5,733	799	10.7	5 37	1.3	67
Lambton:										
Bosanquet	70,982	2,488	1,525,604	13,453	13,457	2,931	8.8	5 41	1.9	1 18

Brooke.....	73,999	3,278	1,817,860	26,789	25,887	4,908	14.7	8 17	2.7	1 50
Dawn.....	65,524	3,389	889,105	21,663	18,310	2,511	24.4	6 39	2.8	1 74
Enniskillen.....	81,841	4,614	1,464,085	30,320	32,309	5,889	20.7	6 57	3.5	1 21
Euphemia.....	39,172	2,210	989,552	9,606	9,935	1,655	9.7	4 35	1.7	75
Moore.....	73,260	4,463	1,808,715	27,104	27,674	3,397	15.0	6 07	1.9	76
Plympton.....	75,015	3,342	2,047,555	21,021	19,583	3,816	10.3	6 29	1.9	1 14
Sarnia.....	38,347	2,064	775,029	16,343	13,855	1,593	21.1	7 92	2.1	77
Sombra.....	72,017	3,749	1,012,120	21,632	23,327	3,014	21.4	5 77	3.0	80
Warwick.....	70,129	3,087	2,013,600	15,544	16,503	3,442	7.7	5 04	1.7	1 11
Lanark:										
Bathurst.....	61,712	2,440	806,430	7,857	7,804	701	9.7	3 22	.9	29
Beckwith.....	56,904	1,655	500,220	5,986	5,987	1,900	12.0	3 62	3.8	1 15
Burgess, N.....	32,788	867	187,485	2,307	2,195	193	12.3	2 66	1.0	22
Dalhousie & Sherbrooke, N.....	72,558	1,729	252,293	4,484	4,751	832	17.8	2 59	3.3	48
Darling.....	45,310	720	69,098	1,679	1,736	178	24.3	2 33	2.6	25
Drummond.....	57,787	1,904	709,124	7,326	7,256	1,753	10.3	3 85	2.5	92
Elmsley, N.....	28,228	1,065	375,630	3,277	3,372	330	8.7	3 08	.9	31
Lanark.....	57,798	1,698	440,130	5,228	5,962	468	11.9	3 08	1.1	28
Lavant.....	44,753	485	56,100	1,693	1,748	151	30.2	3 49	2.7	31
Montague.....	62,622	2,208	583,265	6,724	6,571	952	11.5	3 05	1.6	42
Pakenham.....	56,291	1,915	618,924	7,060	7,062	1,041	11.4	3 69	1.7	54
Ramsay.....	61,408	2,084	680,750	9,926	9,904	2,876	14.6	4 76	4.2	1 38
Sherbrooke, S.....	36,990	815	91,006	1,735	1,877	117	19.1	2 13	1.3	14
Leeds:										
Bastard and Burgess, S.....	56,246	2,684	744,255	10,274	9,446	682	13.8	3 83	.9	25
Crosby, N.....	43,284	1,805	375,264	6,882	7,330	402	18.3	3 81	1.1	22
Crosby, S.....	36,733	1,591	387,876	6,250	6,291	409	16.1	3 93	1.1	26
Elizabethtown.....	78,000	3,849	1,396,333	15,275	16,445	2,453	10.9	3 97	1.8	64
Elmsley, S.....	22,258	745	456,050	2,880	2,878	285	6.3	3 87	.6	36
Kitley.....	47,012	1,893	1,037,850	7,476	7,632	1,546	7.2	3 95	1.5	82
Leeds & Lansdowne, F.....	56,350	2,671	1,019,790	12,871	12,927	4,709	12.6	4 82	4.6	1 76
Leeds & Lansdowne, R.....	44,472	2,262	575,070	8,348	7,691	1,388	14.1	3 69	2.4	61
Yonge & Escott, F.....	54,902	2,191	715,615	12,214	12,223	1,938	17.1	5 57	2.7	88
Yonge & Escott, R.....	27,334	1,025	399,410	5,972	6,459	540	15.0	5 83	1.4	53
Lennox and Addington:										
Adolphustown.....	11,495	487	342,304	2,738	2,735	173	8.0	5 62	.5	36
Amherst Island.....	14,521	834	349,030	3,403	3,384	267	9.7	4 08	.8	32
Camden, E.....	86,356	5,262	1,457,740	21,346	22,309	5,623	14.6	4 06	3.9	1 07
Denbigh, Abinger and Ashby.....	44,278	1,043	53,999	1,878	1,607	187	34.8	1 80	3.5	18
Ernestown.....	61,236	3,160	1,460,980	14,419	15,457	1,952	9.9	4 56	1.3	62
Fredericksburg, N.....	23,437	1,414	713,275	6,857	6,781	1,027	9.6	4 85	1.4	73
Fredericksburg, S.....	20,340	1,018	568,190	5,688	5,468	689	10.0	5 59	1.2	68
Kaladar, Anglesea and Effingham.....	57,756	1,257	71,811	2,821	2,769	151	39.3	2 24	2.1	12
Richmond.....	49,831	2,176	860,985	10,535	11,095	1,870	12.2	4 84	2.2	86
Sheffield.....	68,978	2,025	671,972	7,024	8,843	562	10.5	3 47	.8	28

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1900—Continued.

Township municipality	Assessed area in acres	Assessed population, 1900	Total values assessed, 1900	Total municipal and school taxes 1900		Total expend- iture on roads and bridges, 1900	Mills on \$	Total tax imposed per head	Mill rate for roads and bridges	Roads and bridges ex- penditure per head
				Imposed	Received					
			\$ c.	\$	\$	\$		\$ c.		\$ c.
Lincoln:										
Caistor.....	32,774	1,730	663,660	5,720	5,578	1,068	8.6	3 31	1.6	62
Clinton.....	24,716	1,831	1,043,823	9,784	9,906	2,041	9.4	5 34	2.0	1 11
Gainsborough.....	39,831	2,397	1,058,473	8,758	8,744	1,056	8.3	3 65	1.0	44
Grantham.....	19,093	1,834	1,270,480	8,659	9,114	1,092	6.8	4 72	.9	60
Grimsby, N.....	15,685	1,205	835,425	7,101	7,417	2,314	8.5	5 89	2.8	1 92
Grimsby, S.....	18,134	1,323	580,050	6,569	6,475	901	11.3	4 97	1.6	68
Louth.....	18,696	1,885	717,195	7,798	7,938	1,551	10.9	4 63	2.2	92
Niagara.....	22,344	1,762	931,655	11,498	9,005	2,822	12.3	6 53	3.0	1 60
Middlesex:										
Adelaide.....	44,218	2,047	869,749	11,715	11,737	2,668	13.5	5 72	3.1	1 30
Biddulph.....	39,285	2,350	1,218,815	10,404	10,790	4,293	8.5	4 43	3.5	1 83
Caradoc.....	61,975	3,924	1,200,356	18,655	18,582	4,890	15.5	4 75	4.1	1 25
Delaware.....	23,455	1,528	588,625	7,120	7,785	1,526	12.1	4 66	2.6	1 00
Dorchester, N.....	51,616	3,515	1,701,305	16,778	17,454	6,604	9.9	4 77	3.9	1 88
Ekfrid.....	53,428	2,686	2,012,300	16,583	15,208	3,398	8.2	6 27	1.7	1 28
Lobo.....	47,284	2,862	1,755,130	15,049	15,098	3,815	8.6	5 60	2.2	1 42
London.....	99,833	8,512	4,149,410	41,549	42,045	21,823	10.0	4 88	5.3	2 56
McGillivray.....	66,772	3,096	2,006,275	15,199	15,369	6,232	7.6	4 91	3.1	2 01
Metcalfe.....	36,192	1,517	1,001,820	10,771	7,330	1,790	10.8	7 10	1.8	1 18
Mosa.....	47,214	2,534	580,589	11,942	12,228	2,087	20.6	4 71	3.6	82
Nissouri, W.....	49,500	2,700	1,460,950	14,920	15,650	2,452	10.2	5 53	1.7	91
Westminster.....	63,097	4,179	2,982,430	19,957	21,831	6,324	6.7	4 78	2.1	1 51
Williams, E.....	38,693	1,464	1,230,810	10,402	10,588	2,000	8.5	7 11	1.6	1 37
Williams, W.....	35,176	1,516	893,640	8,528	8,939	2,647	9.5	5 63	3.0	1 75
Norfolk:										
Charlottetville.....	62,608	3,289	934,567	13,272	16,718	2,457	14.2	4 04	2.6	75
Houghton.....	33,550	2,031	459,175	6,458	6,593	824	14.1	3 18	1.8	41
Middleton.....	45,334	2,689	757,553	9,843	9,542	1,849	13.0	3 66	2.4	68
Townsend.....	64,954	3,675	2,374,500	17,416	16,537	1,586	7.3	4 74	.7	43
Walsingham, N.....	40,244	2,240	555,920	8,954	8,979	2,429	16.1	4 00	4.4	1 08
Walsingham, S.....	53,920	1,724	692,523	9,935	10,327	1,175	14.3	5 76	1.7	68
Windham.....	66,719	3,786	1,569,465	14,197	13,209	1,174	9.0	3 75	.7	31
Woodhouse.....	34,500	1,869	1,113,584	9,366	9,449	1,184	8.4	5 01	1.1	63

Northumberland:

Alnwick.....	16,603	1,031	327,850	3,202	3,340	736	9.8	3.11	2.2	71
Brighton.....	48,849	2,569	1,178,970	8,904	8,924	1,781	7.6	3.47	1.5	69
Cramahe.....	46,568	2,437	1,092,360	9,111	10,803	1,493	8.3	3.74	1.4	61
Haldimand.....	76,390	3,895	1,926,870	14,979	19,163	2,965	8.7	3.85	1.7	76
Hamilton.....	62,115	3,952	1,927,830	13,275	14,856	2,623	6.9	3.36	1.4	66
Monaghan, S.....	18,358	850	536,885	3,654	3,526	605	6.8	4.30	1.1	71
Murray.....	48,479	2,708	1,133,875	9,304	9,202	1,150	7.9	3.44	1.0	42
Percy.....	51,488	2,998	969,900	11,212	11,498	2,643	11.6	3.74	2.7	88
Seymour.....	66,920	2,945	1,125,175	12,870	12,511	4,476	11.4	4.37	4.0	52
Ontario:										
Brook.....	66,380	3,528	2,017,045	14,917	15,687	2,554	7.4	4.23	1.3	72
Marka.....	61,472	2,836	951,060	10,476	10,696	3,243	11.0	3.69	3.4	114
Pickering.....	71,375	5,338	3,383,604	25,814	26,531	7,983	7.6	4.84	2.4	150
Rama.....	33,708	1,189	148,875	3,393	3,326	810	22.8	2.85	5.4	68
Reach.....	63,518	3,481	1,973,924	12,851	13,766	2,026	6.5	3.69	1.0	58
Scott.....	49,237	2,185	1,026,560	9,339	9,375	1,131	9.1	4.27	1.1	52
Scugog.....	9,244	473	287,600	1,880	1,919	169	6.5	3.97	.6	36
Thorah.....	32,059	1,316	536,218	4,998	5,404	1,328	9.3	3.80	2.5	101
Uxbridge.....	51,719	2,727	993,895	10,593	10,950	1,551	10.7	3.88	1.6	56
Whitby, E.....	31,175	2,526	1,626,235	10,165	10,133	2,476	6.3	4.02	1.5	98
Whitby.....	30,735	2,064	1,494,045	11,363	11,649	2,863	7.6	5.51	1.9	38
Oxford:										
Blandford.....	29,675	1,542	1,081,285	7,676	7,699	1,627	7.1	4.98	1.5	105
Blenheim.....	66,907	4,269	2,293,350	20,464	20,529	4,774	8.9	4.79	2.1	111
Dereham.....	65,068	3,711	2,411,230	25,105	25,139	4,726	10.4	6.77	1.9	127
Nissouri, E.....	46,426	2,388	2,126,125	12,276	12,183	3,950	5.8	5.14	1.9	165
Norwich, N.....	33,864	2,207	1,515,350	12,001	13,077	3,353	7.9	5.44	2.2	151
Norwich, S.....	35,661	2,317	1,003,976	9,879	9,889	3,749	9.8	4.26	3.7	161
Oxford, E.....	34,548	1,883	1,480,605	9,431	7,892	2,321	6.4	5.01	1.6	123
Oxford, N.....	21,130	1,242	877,222	7,106	8,517	1,418	8.1	5.72	1.6	114
Oxford, W.....	25,882	2,046	1,099,090	8,666	9,291	1,275	7.9	4.24	1.2	62
Zorra, E.....	57,553	3,867	2,725,460	22,282	22,768	9,413	8.2	5.76	3.5	243
Zorra, W.....	55,013	2,125	2,562,720	12,259	16,810	2,601	6.0	7.18	1.0	122
Peel:										
Albion.....	55,855	2,751	1,102,500	11,837	11,895	2,093	10.7	4.30	1.9	76
Caledon.....	68,607	3,739	1,772,835	14,526	14,466	2,959	8.2	3.88	1.7	79
Chingacousy.....	80,132	3,888	2,921,300	18,010	17,676	2,342	6.2	4.63	.8	60
Toronto.....	64,393	5,087	2,718,045	19,779	18,164	4,170	7.3	3.89	1.5	81
Toronto Gore.....	19,000	970	734,010	5,418	5,446	1,641	7.4	5.59	2.2	169
Perth:										
Blanshard.....	45,911	2,563	2,099,350	13,644	14,071	4,268	6.5	5.32	2.0	166
Downle.....	48,571	2,716	2,057,150	13,341	12,795	2,806	6.5	4.91	1.4	103
Easthope, N.....	43,105	2,194	1,932,420	11,770	11,942	2,325	6.1	5.36	1.1	105
Easthope, S.....	23,816	1,917	1,144,415	8,525	8,550	3,215	7.4	4.45	2.9	167

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1900—Continued.

Township Municipality	Assessed area In acres	Assessed population, 1900	Total values assessed, 1900	Total municipal and school taxes 1900		Total expend- iture on roads and bridges, 1900	Mills on \$	Total tax imposed per head	Mill rate for roads and bridges	Roads and bridges ex- penditure per head
				Imposed	Received					
	Acres		\$	\$	\$	\$		\$ c.		\$ c.
Ellice.....	54,511	3,027	1,626,724	20,602	20,620	4,151	12.7	6 81	2.6	1 37
Elma.....	67,291	3,357	1,611,665	21,665	22,055	8,159	13.4	6 45	5.1	2 43
Fullarton.....	40,289	2,219	1,897,675	12,709	12,825	6,328	6.7	5 73	3.3	2 85
Hibbert.....	41,432	2,117	1,606,975	11,198	11,471	2,987	7.0	5 29	1.9	1 41
Logan.....	53,774	2,961	1,898,145	17,031	17,220	5,231	9.0	5 75	2.8	1 76
Morningtown.....	50,055	2,913	1,735,775	16,763	16,789	3,644	9.7	5 75	2.1	1 25
Wallace.....	49,873	2,779	1,953,661	14,101	13,825	2,009	7.2	5 07	1.0	1 72
Peterborough:										
Asphodel.....	37,780	1,762	843,970	7,789	7,927	1,291	9.2	4 42	1.5	73
Belmont & Methuen.....	80,932	1,988	197,421	5,372	5,467	1,636	27.2	2 70	5.2	52
Burling & Anstruther.....	30,761	616	88,364	2,428	1,662	24	27.5	3 94	.3	03
Chandos.....	42,166	741	55,434	2,171	1,850	67	39.2	2 93	1.2	09
Douro.....	38,653	2,007	770,600	7,133	7,248	1,272	9.3	3 55	1.7	63
Dummer.....	68,773	2,056	617,075	6,389	6,450	826	10.4	3 11	1.3	40
Ennismore.....	17,379	708	358,080	2,664	1,805	110	7.4	3 76	1.3	15
Galway & Cavendish.....	48,942	1,100	49,635	1,368	1,375	1	27.6	1 23	.0	00
Harvey.....	69,044	1,063	175,133	3,230	3,508	225	18.4	3 04	1.3	21
Monaghan, N.....	13,950	903	603,350	4,729	4,795	1,310	7.8	5 24	2.2	21
Otonabee.....	64,669	3,278	1,979,786	14,719	14,338	3,363	7.4	4 49	1.7	02
Smith.....	57,738	2,565	1,449,710	11,668	12,635	2,211	8.0	4 55	1.5	86
Prescott:										
Alfred.....	43,976	3,034	327,275	7,477	7,573	600	22.8	2 46	1.8	19
Caledonia.....	45,269	1,759	283,579	7,174	7,590	352	25.3	4 08	1.2	20
Hawkesbury, E.....	56,433	4,846	450,295	10,907	11,148	1,009	24.2	2 25	2.2	21
Hawkesbury, W.....	28,767	1,338	264,107	5,634	5,607	302	21.3	4 21	1.1	22
Longueuil.....	17,494	941	170,675	2,656	2,373	151	15.6	2 82	.9	16
Plantagenet, N.....	50,521	3,774	406,650	10,160	10,438	1,666	25.0	2 69	4.1	44
Plantagenet, S.....	48,769	3,312	391,566	8,979	10,685	1,682	22.9	2 71	4.3	50
Prince Edward:										
Ameliasburg.....	43,282	2,995	1,129,710	11,470	12,510	1,710	10.2	3 83	1.5	57
Athol.....	23,042	1,093	477,215	3,677	3,739	148	7.7	3 36	.3	13
Hallowell.....	43,864	2,846	1,123,950	9,595	9,792	1,440	8.5	3 37	1.3	51
Hillier.....	32,248	1,537	737,005	6,486	6,543	328	8.8	4 22	.4	21
Marysburg, N.....	23,571	1,182	473,525	4,097	4,112	147	8.7	3 47	.3	12

Marysburg, S.....	23,280	1,187	354,640	3,721	3,818	378	10.5	3 14	1.1	31
Sophiasburg.....	43,318	1,854	989,634	7,202	7,089	517	7.3	3 90	.5	27
Renfrew:										
Admaston.....	70,263	2,215	742,835	5,364	6,453	649	7.2	2 42	.9	29
Algona, S.....	31,012	1,930	38,945	1,271	1,626	35	32.6	1 37	.9	03
Alice & Fraser.....	60,961	1,940	118,825	3,573	3,231	141	30.1	1 84	1.1	07
Bagot & Blithfield.....	58,664	1,397	152,793	3,184	3,458	326	20.8	2 28	2.1	23
Bromley.....	50,439	2,001	168,140	4,816	5,351	300	28.6	2 41	1.7	14
Brougham.....	19,072	578	31,675	806	952	136	25.4	1 39	4.3	23
Brudenell & Lyndoch.....	50,773	1,339	70,825	2,115	3,086	137	29.9	1 58	1.6	02
Grafton.....	60,285	1,886	210,060	3,562	3,838	271	17.0	1 89	1.3	14
Griffith & Matawatchan.....	23,440	700	21,150	1,025	1,176	146	48.5	1 46	6.9	08
Hagarty & Jones.....	76,044	2,750	75,000	4,000	4,944	329	53.3	1 45	4.4	19
Head, Clara & Maria.....	14,538	359	35,075	1,299	1,278	44	37.0	3 62	1.3	1
Horton.....	38,057	1,431	497,581	3,926	4,544	411	7.9	2 74	.8	28
McNab.....	62,616	3,383	1,124,970	8,654	9,130	1,953	7.7	2 56	1.7	57
Pembroke.....	719	719	182,723	1,464	2,001	87	8.0	2 04	.5	12
Petewawa & McKay.....	28,572	947	43,999	1,778	1,510	135	40.4	1 88	3.7	14
Radcliffe & Raganan.....	40,171	945	78,335	2,233	2,183	221	28.5	2 36	2.8	23
Rolph, Buchanan & Wylie.....	40,625	1,036	57,141	2,040	1,877	43	35.7	1 97	.8	04
Ross.....	52,146	2,801	632,600	6,050	6,890	721	9.6	2 16	1.1	22
Sebastopol.....	30,052	729	54,491	1,137	1,354	112	20.9	1 56	2.1	15
Staford.....	21,318	1,073	75,435	2,605	3,037	140	34.5	2 43	1.9	13
Westmeath.....	70,443	3,419	293,777	9,436	9,154	925	32.1	2 76	3.1	27
Wilberforce & Algona, N.....	68,537	2,159	134,350	4,012	3,163	562	29.9	1 86	4.2	26
Russell:										
Cambridge.....	59,615	2,992	424,473	10,163	9,050	2,093	23.9	3 40	4.9	69
Clarence.....	69,370	4,820	363,504	12,184	12,613	1,649	33.5	2 53	4.5	34
Cumberland.....	74,696	3,597	429,994	12,966	12,453	1,261	30.2	3 60	2.9	35
Russell.....	47,175	3,104	663,306	11,742	11,109	2,638	17.7	3 78	3.9	85
Simcoe:										
Adjala.....	45,915	2,108	853,240	8,281	9,681	1,748	9.7	3 93	2.0	84
Essa.....	67,532	4,260	1,289,494	12,533	12,001	2,94	9.7	2 94	1.4	43
Flos.....	62,694	3,355	980,603	16,272	23,845	2,001	16.6	4 85	2.0	59
Gwillimbury, W.....	46,860	2,330	1,045,184	10,108	10,292	761	9.7	4 34	4.7	32
Innisfil.....	67,964	3,547	1,366,174	13,439	14,174	2,559	9.8	3 79	1.8	72
Matchedash.....	19,672	456	54,680	1,002	582	233	18.3	2 20	4.3	51
Medonte.....	65,568	3,954	561,028	11,462	11,756	2,270	20.4	2 90	4.0	57
Nottawasaga.....	90,048	5,399	2,073,855	19,318	22,704	4,818	9.3	3 58	2.3	89
Orillia.....	72,701	3,468	580,181	11,927	12,073	3,784	20.6	3 47	6.5	1
Oro.....	73,227	3,893	1,062,675	10,539	11,727	1,218	9.9	2 71	1.1	31
Sunnidale.....	54,945	2,217	836,584	7,841	8,018	2,029	9.4	3 54	2.4	91
Tay.....	45,529	4,215	574,533	10,275	9,965	1,623	17.9	2 44	2.8	38
Tecumseth.....	65,965	3,221	1,683,785	15,720	17,876	5,770	9.3	4 88	3.4	1
Tiny.....	78,048	3,748	973,223	11,748	14,326	1,878	12.1	3 13	1.9	50

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1900—Continued.

Township Municipality	Assessed area in acres	Assessed population, 1900	Total values assessed, 1900	Total municipal and school taxes 1900		Total expend- iture on roads and bridges, 1900	Mills on \$	Total tax imposed per head	Mill rate for roads and bridges	Roads and bridges ex- penditure per head
				Imposed	Received					
	Acres		\$	\$	\$	\$		\$ c.		\$ c.
Tossorontoio.....	44,597	1,615	728,823	6,115	5,992	725	8.3	3 79	.9	44
Vespra.....	62,060	2,996	489,240	9,829	10,846	1,382	20.1	3 28	2.9	46
Stormont:										
Cornwall.....	64,039	5,674	1,057,398	15,117	15,645	2,870	14.3	2 66	2.7	50
Finch.....	51,222	3,008	666,900	13,410	13,423	3,948	20.1	4 46	5.9	31
Osnabrock.....	62,042	4,721	1,192,980	15,953	15,278	2,789	13.4	3 37	2.3	59
Roxborough.....	71,515	4,197	769,870	16,901	17,222	2,059	22.0	4 03	2.7	49
Victoria:										
Bexley.....	28,236	864	125,424	3,438	3,984	327	27.4	3 98	2.5	37
Carden.....	44,564	705	62,498	1,998	2,248	405	32.0	2 83	6.5	57
Dalton.....	29,032	488	37,048	1,134	1,179	257	30.6	2 32	6.9	52
Eldon.....	61,984	2,913	765,030	11,033	12,598	1,993	14.4	3 79	2.6	68
Emily.....	59,984	2,051	951,743	10,150	10,087	5,563	10.7	4 95	5.8	2
Fenelon.....	51,559	2,282	744,110	8,685	8,748	1,475	11.7	3 81	1.9	64
Laxton, Digby & Longford.....	72,806	761	74,329	2,293	2,778	337	30.8	3 01	4.5	44
Mariposa.....	74,843	3,910	2,590,110	19,693	19,612	3,474	7.6	5 04	1.3	88
Ops.....	56,385	2,171	1,560,450	14,120	14,781	3,794	9.0	6 50	2.4	1
Somerville.....	62,887	1,843	202,545	5,815	5,675	605	28.7	3 16	2.9	32
Verulam.....	55,510	1,794	521,565	7,979	7,717	1,695	15.3	4 45	3.3	94
Waterloo:										
Dumfries, N.....	44,315	2,059	1,871,170	9,675	10,335	1,146	5.2	4 70	.6	55
Waterloo.....	82,175	7,016	3,609,550	29,546	29,570	5,083	8.2	4 21	1.4	72
Wellesley.....	66,059	4,908	2,148,330	21,583	19,394	3,644	10.0	4 40	1.7	74
Wilnot.....	60,809	5,126	2,593,350	19,868	19,868	3,094	7.7	3 88	1.2	60
Woolwich.....	53,539	4,336	2,561,695	19,362	19,411	3,202	7.6	4 47	1.2	73
Welland:										
Bertie.....	34,156	3,040	1,666,345	13,448	13,097	2,479	8.1	4 42	1.5	81
Crowland.....	19,217	967	388,067	4,953	4,819	652	12.8	5 12	1.7	67
Humberstone.....	31,061	2,948	876,625	8,867	8,483	1,102	10.1	3 01	1.3	37
Pelham.....	28,927	2,333	1,008,415	9,311	9,423	2,725	9.2	3 99	2.7	16
Stamford.....	21,241	1,958	805,956	9,995	10,088	1,090	12.4	5 10	1.4	55
Thorold.....	22,851	1,679	632,116	6,661	6,486	814	10.5	3 97	1.3	48
Wainfleet.....	51,000	2,675	873,200	10,729	10,817	1,063	12.3	4 01	1.2	39
Willoughby.....	18,798	981	416,700	3,952	3,976	441	9.5	4 24	1.1	47

Wellington:

Arthur.....	64,438	2,802	1,419,250	12,179	12,186	1,788	8.6	4 35	1.3	63
Eramosa.....	44,064	2,647	1,856,705	10,682	10,241	1,558	5.8	4 04	.8	58
Erin.....	70,498	3,196	2,020,900	13,330	13,997	1,512	6.6	4 17	.7	83
Garafraza, W.....	47,615	2,311	1,609,100	11,176	10,761	1,925	6.9	4 84	1.2	80
Guelph.....	36,661	2,198	1,512,150	9,373	9,722	1,765	6.2	4 26	1.2	80
Luther, W.....	49,644	2,095	1,849,225	9,400	10,539	1,009	11.1	4 49	1.7	1 01
Maryborough.....	56,455	2,964	1,731,000	14,728	14,852	2,983	8.5	4 97	1.2	91
Minto.....	69,403	2,974	1,848,315	13,641	12,135	2,730	7.4	4 59	1.5	44
Nichol.....	26,693	1,686	1,081,305	6,959	7,773	745	6.4	4 13	.7	52
Peel.....	74,244	3,854	1,899,410	17,637	17,629	2,005	9.3	4 58	1.1	90
Pikington.....	29,122	1,396	1,043,306	7,750	8,356	1,269	7.4	5 55	1.2	41
Puslinch.....	58,506	3,321	1,440,645	11,023	10,778	1,377	7.7	3 32	.9	
Wentworth:										
Ancaster.....	45,606	3,788	2,231,662	15,650	14,375	6,077	7.0	4 13	2.7	1 60
Barton.....	13,089	3,441	1,350,816	12,224	10,975	2,496	9.0	3 55	1.8	72
Beverley.....	70,196	3,941	1,997,526	14,136	13,627	2,389	7.1	3 59	1.2	60
Binbrook.....	26,423	1,380	972,750	5,961	6,076	773	6.1	4 32	.8	56
Flamboro, E.....	33,739	2,358	1,708,638	8,643	8,424	1,615	5.1	3 67	.9	68
Flamboro, W.....	31,088	2,759	1,278,350	9,885	10,880	1,401	7.7	3 58	1.1	51
Glanford.....	23,628	1,624	1,068,600	5,646	6,428	283	5.3	3 48	.3	17
Saltfleet.....	28,290	3,038	1,775,737	14,396	14,603	3,074	8.2	4 74	1.3	1 01
York:										
Etobicoke.....	29,092	3,603	1,838,085	20,956	22,217	5,472	11.4	5 82	2.2	1 50
Georgina.....	35,171	1,652	647,730	6,022	6,174	1,036	9.3	3 65	1.6	62
Gwillimbury, E.....	58,436	3,083	1,271,790	12,583	11,850	2,205	9.9	4 08	1.7	71
Gwillimbury, N.....	31,577	1,315	756,100	5,434	5,535	2,647	7.2	4 13	.8	49
King.....	87,656	5,100	2,817,925	21,819	19,661	4,692	7.7	4 28	1.7	92
Markham.....	66,634	5,302	3,209,070	22,237	22,173	4,370	6.9	4 19	1.4	82
Scarborough.....	42,875	3,711	2,087,757	16,840	17,342	4,914	8.1	4 54	2.4	1 32
Vaughan.....	67,192	4,342	2,913,595	22,008	21,442	5,131	7.6	5 07	1.8	1 18
Whitchurch.....	60,116	3,505	1,617,885	11,832	11,962	1,615	7.3	3 38	.9	46
York.....	58,000	8,600	5,722,710	81,527	108,457	20,277	14.2	9 48	3.5	2 35

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1905.

Township Municipality	Assessed area in acres (unstatsd)	Assessed population, 1905	Total values assessed, 1905	Total municipal and school taxes 1905		Total expend- iture on roads and bridges, 1905	Mills on \$	Total tax imposed per head	Mill rate for roads and bridges	Roads and expenditure	Roads and ex- penditure per head
				Imposed	Received						
	Acres		\$	\$	\$	\$		\$ c.			\$ c.
Brant:											
Brantford	4,853	4,075,128	31,992	15,799	12,210	7.9	6.59	2.9		2.51
Burford	4,036	2,298,050	22,814	23,905	7,127	9.9	5.65	3.1		1.76
Dumfries, S.	2,370	2,511,436	16,918	16,943	5,635	6.7	7.14	2.2		2.37
Oakland	690	420,145	3,923	3,947	208	9.3	5.69	.4		30
Onondaga	1,004	760,414	6,606	6,931	952	8.7	6.58	1.2		94
Bruce:											
Albemarle	1,296	374,074	4,721	5,345	1,378	12.6	3.64	3.6		1.06
Amabel	3,490	832,000	12,661	12,365	1,744	15.2	3.63	2.0		43
Arran	2,139	1,482,175	12,942	13,864	6,500	8.7	6.05	4.3		3.03
Brant	3,401	2,026,050	15,364	17,799	5,762	7.6	4.52	2.8		1.69
Bruce	2,719	1,838,962	16,913	17,330	5,814	9.2	6.22	3.1		2.13
Carrick	4,832	2,805,630	17,904	18,038	2,036	6.4	4.14	6.4		42
Culross	2,365	1,757,800	12,038	12,258	2,234	6.8	5.09	1.2		93
Eastnor	1,632	615,715	9,243	9,927	1,299	15.0	5.66	2.1		79
Elderslie	1,800	2,106,975	12,728	12,728	2,821	6.0	7.07	1.3		1.56
Greenock	2,515	1,824,721	12,206	12,199	7,099	6.7	4.85	3.8		2.82
Huron	3,039	2,634,685	16,366	14,446	4,124	6.4	5.58	1.5		1.35
Kincardine	2,593	1,814,000	14,868	16,775	2,965	8.6	6.04	1.6		1.14
Kinloss	2,004	1,582,930	8,887	9,682	1,906	6.1	4.85	1.2		1.95
Lindsay	416	133,385	3,250	2,949	1,180	26.0	4.67	8.8		1.58
St. Edmunds	1,361	68,893	1,875	2,213	300	24.2	4.01	4.4		72
Saugeen		985,010	7,679	8,048	1,013	8.2	5.91	1.0		74
Carleton:											
Fitzroy	2,366	733,810	11,903	11,517	3,149	16.2	5.03	4.2		1.33
Gloucester	6,314	1,767,899	27,870	26,445	6,211	15.8	4.41	3.5		1.98
Goulburn	2,326	851,430	13,332	8,731	3,666	15.7	5.73	4.3		1.57
Gower N.	1,924	1,039,684	10,050	11,340	3,542	9.7	5.22	3.4		1.84
Huntley	2,007	1,291,695	10,821	10,803	3,141	8.4	5.39	2.4		1.56
March	1,053	499,603	4,684	4,783	1,075	9.4	4.45	2.1		1.02
Marlborough	1,400	623,625	7,360	7,985	567	11.8	5.26	.9		40
Nepean	5,294	2,807,476	27,679	25,401	10,264	9.9	5.23	3.6		1.93
Osgoode	4,139	1,546,040	26,772	24,944	4,421	17.3	6.39	2.8		1.07
Torbolton	931	137,975	4,076	3,293	703	29.7	4.38	5.1		75

Dufferin:	2,364	1,809,714	12,858	15,649	1,926	7.1	5.44	1.1	81
Amaranth	1,760	1,139,662	10,201	10,201	2,329	9.0	5.80	2.0	1 32
Garafraza E.	1,549	1,181,998	11,036	11,712	2,453	9.3	7.12	2.0	1 58
Luther E.	3,263	1,964,542	14,724	14,367	2,432	7.5	4.51	1.2	74
Melancthon	2,800	1,554,810	14,369	14,392	3,821	9.2	5.13	2.4	1 36
Mono	2,784	1,466,825	13,895	14,884	3,988	9.5	4.99	2.7	1 43
Dundas:									
Mulmur	3,171	1,354,055	20,971	26,160	3,203	15.5	6.61	2.3	1 01
Matilda	2,794	1,331,109	24,607	16,128	7,732	18.5	8.81	5.8	2 76
Mountain	3,494	1,490,920	20,117	20,489	7,731	13.5	5.76	3.1	1 35
Williamsburg	3,357	1,435,640	30,562	28,077	8,868	21.3	9.10	6.1	2 64
Winchester									
Durham:									
Cartwright	1,660	886,338	9,240	10,292	1,744	10.4	5.56	1.9	1 05
Cavan	2,246	1,557,305	16,481	16,043	4,379	10.6	7.34	2.7	1 50
Clarke	3,280	2,149,060	18,197	17,659	3,232	8.5	5.55	1.5	1 08
Darlington	3,759	2,374,361	21,558	21,703	4,536	9.0	5.68	1.9	1 20
Hope	2,959	2,208,386	14,673	14,232	1,995	6.6	4.96	2.9	67
Manvers	2,782	891,895	14,506	14,441	2,581	16.3	5.23	2.9	93
Elgin:									
Aldbrough	4,413	2,057,658	33,847	31,859	11,558	16.4	7.67	5.6	2 61
Bayham	3,502	1,121,577	22,533	22,707	6,007	20.1	6.43	5.4	1 71
Dorchester S.	1,555	1,757,415	14,115	13,870	4,301	8.0	9.08	2.5	2 76
Dunwich	3,137	2,509,266	22,966	23,384	6,766	9.2	7.32	2.7	2 16
Malahide	3,360	2,600,973	25,833	25,710	5,531	9.9	7.69	2.1	1 64
Southwold	3,395	3,177,856	25,454	25,091	7,655	8.0	7.50	2.4	2 25
Yarmouth	4,537	3,514,543	36,150	35,614	11,320	10.3	7.97	3.2	2 50
Essex:									
Anderson	1,908	690,848	11,654	12,289	1,600	16.9	6.08	2.3	84
Colchester N.	1,882	743,695	17,590	15,737	3,176	23.7	9.35	4.3	1 68
Colchester S.	2,890	1,058,274	23,044	19,751	3,711	21.8	7.97	3.5	1 28
Gosfield N.	1,876	763,285	16,848	16,202	1,342	22.1	8.98	1.8	7 16
Gosfield S.	2,080	1,301,360	18,201	18,021	3,766	14.0	8.75	2.8	1 81
Maldstone	2,767	1,544,227	21,712	20,518	3,309	14.1	7.85	2.1	1 19
Malden	1,399	898,488	9,048	9,470	2,975	10.1	6.47	3.3	2 13
Mersea	4,009	1,894,048	32,876	35,001	6,415	17.4	8.20	3.4	1 60
Rochester	2,434	1,582,475	15,899	17,688	3,200	10.0	6.53	2.0	1 32
Sandwich E.	2,762	754,742	14,912	14,576	1,922	19.8	5.40	2.5	69
Sandwich S.	1,595	825,827	11,230	12,301	1,829	13.7	7.07	2.2	1 14
Sandwich W.	2,467	776,576	11,714	11,343	2,934	15.1	4.75	3.8	1 18
Tilbury N.	2,052	690,936	14,731	14,534	1,391	21.3	7.18	2.0	68
Tilbury W.	1,836	706,574	15,385	15,993	2,067	21.8	8.38	2.9	1 13
(Pelee Island.....)	642	320,280	9,390	10,367	887	29.3	14.63	2.7	1 38)

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1905—Continued.

Township Municipality	Assessed area in acres (unstatsd)	Assessed population, 1905	Total values assessed, 1905	Total municipal and school taxes 1905		Total expend- iture on roads and bridges	Mills on \$	Total tax imposed per head	Milli rate for roads and bridges expenditure	Roads and bridges ex- penditure per head
				Imposed	Received					
Frontenac:	Acres		\$	\$	\$	\$		\$ c.		\$ c.
Barrie	472		77,185	1,553	1,321	45	20.1	3 29		0 96
Bedford	1,125		327,621	6,109	7,757	381	18.6	5 43	1.2	34
Clarendon	961		85,611	2,163	2,136	115	25.3	2 25	1.3	20
Hinchinbrooke	1,100		218,979	5,769	5,681	658	26.3	5 24	3.0	59
Howe Island	317		77,942	1,508	1,695	40	19.3	4 76	.5	13
Kennebec	1,155		107,941	3,635	3,403	192	33.7	3 15	1.7	16
Kingston	2,601		1,165,564	17,085	14,900	1,760	10.6	6 57	1.5	68
Loughborough	1,731		410,760	8,590	8,639	1,250	20.9	4 96	3.0	72
Olden	1,041		108,776	4,600	5,262	542	42.3	4 42	5.0	52
Oso	1,156		117,755	3,497	3,266	236	29.7	3 03	2.0	20
Palmerston	968		93,526	2,933	2,867	222	31.4	3 03	2.4	23
Pittsburg	2,314		817,255	15,230	16,282	3,462	18.6	6 58	4.2	50
Portland	1,907		467,960	10,699	9,927	1,674	22.9	5 61	3.6	88
Storrington	1,766		422,947	9,460	9,410	887	22.4	5 36	2.1	50
Wolfe Island	1,488		583,368	11,376	10,431	1,514	19.5	7 65	2.6	1 02
Glengarry:										
Charlottenburg	4,768		1,181,104	26,512	24,680	11,246	22.4	5 56	9.5	2 36
Kenyon	3,856		1,476,751	16,272	15,730	3,402	11.0	4 22	2.1	79
Lancaster	3,730		2,420,569	13,295	14,327	1,484	5.5	3 56	.6	40
Lochiel	4,630		1,327,840	16,048	15,179	1,390	12.1	3 47	1.1	3 01
Grenville:										
Augusta	3,600		1,318,635	16,965	18,666	3,234	12.9	4 71	2.5	90
Edwardsburg	3,299		1,203,752	14,457	13,497	1,162	12.0	4 58	.9	35
Gower S.	723		317,655	3,322	5,855	296	10.5	4 59	.9	41
Oxford-on-Rideau	2,535		812,156	12,028	13,141	1,452	14.8	4 74	1.8	57
Wolford	1,552		940,100	7,601	8,915	991	8.1	4 90	1.1	64
Grey:										
Artemesia	3,168		1,076,595	17,173	17,226	3,931	16.0	5 42	3.7	1 24
Bentick	3,135		1,806,445	13,524	12,625	4,197	7.5	4 31	2.3	1 34
Collingwood	3,363		1,404,870	17,277	17,208	3,400	12.3	5 14	2.4	1 01
Derby	1,833		976,397	10,292	10,281	3,643	10.5	5 61	3.7	1 99
Egremont	2,983		2,092,393	14,211	14,258	2,964	6.8	4 76	1.4	99
Euphrasia	2,789		1,267,605	14,699	15,268	2,410	11.6	5 27	1.9	87

Glennelg	2,325	763,050	10,059	10,223	2,743	13.2	4.33	3.6	1.18
Holland	2,439	1,354,048	11,739	8,546	1,998	8.7	4.81	1.5	.82
Keppel	3,529	757,180	14,434	23,114	3,900	19.0	4.09	5.2	1.10
Normanby	4,109	2,190,455	18,053	18,066	2,753	8.2	4.39	1.3	.67
Osprey	2,931	1,052,300	13,447	13,484	2,476	12.8	4.59	2.3	.84
Proton	3,484	1,372,450	15,941	15,682	3,213	11.6	4.58	2.3	.92
St. Vincent	2,598	1,386,565	16,482	16,565	3,973	11.9	6.34	2.9	1.53
Sarawak	1,446	348,946	7,489	7,698	3,612	21.5	5.18	1.0	2.50
Sullivan	2,843	1,149,725	14,189	13,984	2,440	12.3	4.99	2.1	.86
Sydenham	3,221	1,906,887	16,820	17,198	4,777	8.8	5.22	2.5	1.48
Haldimand:									
Canborough	870	520,185	4,850	4,618	444	9.3	5.57	.9	.51
Cayuga N.	1,527	919,005	7,349	7,502	546	8.0	4.81	.6	.36
Cayuga S.	712	393,765	3,079	3,127	146	7.8	4.32	.4	.21
Dunn	796	434,340	3,799	3,792	188	8.7	4.77	.4	.24
Moulton	1,710	647,242	6,880	6,319	473	10.6	4.02	.7	.28
Oneida	1,279	1,007,000	7,923	7,917	489	7.9	6.19	.5	.38
Rainham	1,742	785,315	7,073	7,078	1,969	9.0	4.06	2.5	1.13
Seneca	1,635	1,183,125	10,033	9,975	2,748	8.5	6.14	2.3	1.68
Sherbrooke	322	166,601	1,383	1,307	59	8.3	4.30	.4	.18
Walpole	3,756	1,970,420	23,072	22,990	3,486	11.7	6.14	1.7	.93
Haliburton:									
Anson and Hindon	253	34,970	1,038	1,157	44	29.7	4.10	1.3	.18
Cardiff	534	67,896	2,072	1,518	83	30.5	3.88	1.2	.16
Dysart and northwards	1,054	392,040	5,698	5,275	1,531	14.5	5.41	3.9	1.33
Glamorgan	521	30,074	1,455	1,221	198	48.4	2.79	6.6	.38
Lutterworth	409	36,875	1,373	1,662	116	27.2	3.27	3.1	.28
Minden	1,148	90,951	3,340	3,537	529	36.7	2.91	5.8	.46
Monmouth	591	56,316	2,614	1,722	58	46.8	4.42	1.0	.98
Sherbourne and Northumberland	221	48,407	1,218	1,434	200	25.2	5.51	4.1	.91
Snowdon	735	73,753	2,649	2,398	226	35.9	3.60	3.1	.31
Stanhope	469	50,745	1,118	1,043	76	22.0	2.38	1.5	.16
Halton:									
Esquesing	3,347	2,211,576	16,752	17,515	7,209	7.6	5.00	3.3	2.15
Nassagaweya	2,080	1,500,695	8,024	7,570	2,104	5.3	3.86	1.4	1.01
Nelson	2,529	2,403,897	15,217	14,920	4,052	6.3	6.02	1.7	.60
Trafalgar	3,139	2,605,564	16,347	16,695	6,292	6.3	5.21	2.4	.20
Hastings:									
Bangor W. and McClure	1,023	67,175	2,751	2,275	369	41.0	2.69	5.5	.36
Carlow	670	60,073	2,603	2,259	873	43.3	3.89	14.5	1.30
Duncannon	785	86,568	2,528	2,496	373	29.2	3.20	4.3	.48
Elzevir and Grimsthorpe	1,344	318,975	4,299	3,866	477	13.5	3.20	1.5	.35
Faraday	767	76,288	2,893	4,232	552	37.9	3.77	7.3	.72
Hungerford	3,437	1,605,384	12,003	14,855	1,075	7.5	3.49	.7	.31
Huntingdon	2,105	473,957	8,816	8,354	432	18.6	4.19	.9	.21

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1905—Continued.

Township Municipality	Assessed area in acres (unstatsd)	Assessed population, 1905	Total values assessed, 1905	Total municipal and school taxes 1905		Total expend- iture on roads and bridges	Mills on \$	Total tax imposed per head	Mill rate for roads and bridges	Roads and bridges ex- penditure per head
				Imposed	Received					
Limerick	522	60,215	1,708	\$ 1,863	\$ 385	28.4	3.27	6.4	\$ c.	\$ 74
Madoc	2,674	1,119,470	14,508	14,837	432	13.0	5.43	2.5	16	38
Marmora and Lake	1,636	250,168	7,013	8,676	619	28.0	4.29	7.5	49	49
Mayo	543	35,135	1,683	1,655	265	47.9	3.10	3.8	24	24
Monteagle and Herschel	1,681	108,883	3,888	3,203	409	35.7	2.31	1.9	29	29
Rawdon	3,119	1,171,035	15,742	16,392	917	13.4	5.09	6.1	1	36
Sidney	3,798	2,091,332	22,751	23,012	3,879	10.9	5.99	3.0	79	79
Thurlow	3,450	2,119,650	19,056	18,626	1,252	9.0	5.52	3.4	23	23
Tudor and Cashel	836	108,038	2,755	2,721	667	25.5	3.30	3.7	71	71
Tyendinaga	3,307	1,399,013	16,171	15,904	966	11.6	4.89	3.4	23	23
Wollaston	839	177,191	3,097	2,717	597	17.5	3.69	3.4	23	23
Huron:										
Ashfield	2,916	1,697,218	15,967	15,063	3,271	9.4	5.48	1.9	1	12
Colborne	1,679	1,401,325	9,193	9,238	1,586	6.6	5.48	1.1	95	95
Goderich	2,175	1,471,105	14,411	14,379	2,707	9.8	6.63	1.8	1	25
Gray	3,040	2,844,200	22,250	23,421	16,105	7.8	7.32	5.7	5	30
Hay	3,295	2,325,800	18,121	18,729	3,538	7.8	5.50	1.5	1	07
Howick	3,668	2,868,437	22,305	21,895	7,760	7.8	6.08	2.7	2	18
Hullett	2,654	1,913,535	19,245	19,293	6,343	10.1	7.25	3.3	2	39
McKillop	2,388	2,233,190	19,380	19,664	4,351	8.7	8.12	1.9	1	82
Morris	2,296	1,937,345	14,359	13,975	5,263	7.4	6.25	2.7	2	30
Stanley	1,952	1,997,989	14,601	14,823	4,165	7.3	7.48	2.1	2	14
Stephen	3,755	2,757,938	17,032	16,403	3,487	6.2	4.54	1.3	93	93
Tuckersmith	2,073	2,007,654	15,936	16,004	7,180	7.9	7.69	3.6	3	46
Turnberry	2,028	1,329,085	9,441	9,466	2,670	7.1	4.66	2.0	1	31
Usborne	2,120	1,866,632	21,970	23,183	6,126	11.8	10.36	3.3	2	88
Wawanosh E.	1,755	1,468,900	9,589	9,534	1,330	6.5	5.46	2.4	2	76
Wawanosh W.	1,894	1,589,512	11,572	11,665	3,866	7.3	6.11	2.4	2	04
Kent:										
Camden	2,414	1,750,792	18,761	18,992	1,533	10.7	7.77	1.9	64	64
Chatham	5,123	3,236,000	47,767	48,261	3,169	14.8	9.32	1.0	62	62
Dover	4,213	2,281,907	27,747	26,056	2,369	12.2	6.59	1.0	56	56
Harwich	4,323	3,861,911	35,547	35,547	7,138	9.2	8.22	1.8	1	65
Howard	2,710	2,442,034	27,411	26,029	7,938	11.2	10.11	3.2	2	93
Orford	2,532	1,741,469	19,986	19,928	3,290	11.5	7.89	1.9	1	30

Raleigh	4,245	2,773,040	43,494	38,456	4,503	15.7	10.25	1.6	1.05
Romney	1,728	1,817,685	17,380	18,891	3,183	21.3	10.06	3.9	1.84
Tilbury E.	2,887	1,681,065	39,213	31,754	9,083	23.3	13.58	5.4	3.14
Zone	1,064	686,805	8,305	10,446	1,845	12.1	7.81	2.6	1.73
Lambton:									
Bosanquet	2,606	2,177,543	17,876	17,323	4,159	8.2	6.86	1.9	1.59
Brooke	3,081	2,485,929	39,854	37,189	15,521	16.0	12.94	6.3	5.03
Dawn	3,232	1,374,795	29,549	24,868	1,423	21.5	9.14	1.0	44
Enniskillen	4,031	2,290,620	33,354	35,440	6,765	14.6	8.27	3.0	1.68
Euphemia	1,901	1,047,645	12,788	9,314	9,314	12.2	6.73	8.9	4.90
Moore	4,264	2,045,258	31,122	30,193	7,577	10.6	7.30	3.7	1.77
Plympton	3,252	2,513,887	26,378	27,316	5,686	10.5	8.11	2.2	1.75
Sarnia	1,892	1,220,924	16,271	17,411	2,453	13.3	8.60	2.0	1.29
Sombra	2,889	1,773,633	26,772	27,305	5,111	15.1	6.66	2.9	1.27
Warwick	2,889	2,295,100	20,651	16,618	5,499	9.0	7.15	2.4	1.90
Lanark:									
Bathurst	2,121	817,939	8,942	9,235	500	10.8	4.17	.6	24
Beckwith	1,535	505,893	6,832	7,610	1,217	13.7	4.52	2.4	79
Burgess N.	1,707	228,665	3,181	3,448	324	13.9	4.50	1.4	46
Dalhousie and Sherbrooke N.	1,519	495,752	5,497	5,193	5,193	11.1	3.62	1.6	53
Darling	693	117,511	2,017	2,087	109	17.2	2.91	.9	16
Drummond	1,899	929,868	9,750	9,818	907	10.5	5.13	.9	48
Elmsley N.	955	390,724	4,491	4,424	781	11.5	4.70	2.0	82
Lanark	1,660	856,485	6,355	6,685	640	7.4	3.83	.8	39
Lavant	490	77,326	1,981	1,841	69	15.6	4.04	.9	41
Montague	1,850	592,837	9,729	8,850	870	26.4	5.26	1.5	47
Pakenham	1,563	627,129	8,984	8,553	1,064	14.3	5.75	1.7	68
Ramsay	2,034	633,015	11,842	11,877	2,380	18.7	5.82	3.8	17
Sherbrooke S.	789	90,503	1,886	2,293	550	20.8	2.39	6.1	70
Leeds:									
Bastard and Burgess S.	2,475	1,841,295	12,187	12,525	3,270	6.6	4.92	1.8	32
Crosby N.	981	275,200	5,420	6,126	286	19.7	5.52	1.0	29
Crosby S.	1,446	735,440	7,157	7,127	2,593	9.7	4.95	3.5	179
Elizabethtown	3,787	1,424,040	19,201	17,678	3,822	13.5	5.07	2.7	101
Elmsley S.	705	455,682	3,952	4,401	775	8.7	5.61	1.7	110
Kitley	1,611	1,025,764	9,668	9,624	2,868	8.0	6.00	2.8	178
Leeds and Lansdowne F.	2,407	1,938,059	15,676	15,864	6,153	8.4	6.51	3.1	256
Leeds and Lansdowne R.	2,114	1,356,831	10,556	10,566	3,821	7.8	4.99	2.8	181
Yonge and Escott F.	2,331	955,212	14,883	14,073	3,155	15.6	6.38	3.3	135
Yonge and Escott R.	1,183	432,543	6,752	6,675	912	15.6	5.71	2.1	77
Lennox and Addington:									
Adolphustown	572	319,929	3,198	3,477	302	10.0	5.59	.9	53
Amherst Island	793	353,050	4,054	3,845	177	11.5	5.11	.5	22
Camden E.	4,114	1,739,245	21,170	25,100	4,529	12.2	5.15	2.6	113
Denbigh, Abinger and Ashby	980	68,451	2,046	2,416	134	29.9	2.09	2.0	14

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1905—Continued.

Township Municipality	Assessed area (unstatsd)	Assessed population, 1905	Total values assessed, 1905	Total municipal and school taxes 1905		Total expend- iture on roads and bridges, 1905	Mills on \$	Total tax head imposed per head	Mill rate for roads and bridges expenditure	Roads and bridges ex- penditure per head
				Imposed	Received					
Ernesttown	2,982	1,499,747	14,825	14,542	\$ 3,219	9.9	\$ 4 97	2.1	\$ 1 08
Fredericksburg N.	1,426	717,435	6,843	7,706	1,929	9.5	4 80	2.6	1 35
Fredericksburg S.	967	729,024	6,021	5,863	834	8.3	4 20	1.1	86
Kaladar and Anglesea	1,172	162,244	2,859	2,472	236	17.6	2 44	1.5	2 01
Richmond	2,327	1,006,555	11,779	13,612	3,949	11.7	5 06	3.9	1 70
Sheffield	1,929	763,004	8,549	8,797	1,156	11.2	4 43	1.5	60
Lincoln:
Caistor	1,586	691,709	7,032	6,744	1,305	10.2	4 43	1.9	82
Clinton	1,794	1,464,945	13,857	14,591	3,545	9.5	7 72	2.4	1 98
Gainsborough	2,298	1,273,519	9,691	9,970	2,462	7.6	4 22	1.9	1 07
Grantham	1,961	1,254,700	9,657	9,798	923	7.7	4 92	1.7	47
Grimsby N.	1,302	875,095	8,869	10,199	1,404	10.1	6 81	1.6	1 08
Grimsby S.	1,307	684,127	8,281	8,106	1,507	12.1	6 34	2.1	1 50
Louth	1,759	790,472	11,898	12,718	4,949	15.1	6 76	6.3	2 81
Niagara	1,732	926,469	10,848	11,561	2,934	11.7	6 26	3.2	1 69
Middlesex:
Adelaide	1,814	2,047,935	16,138	16,146	4,541	7.9	8 90	2.1	2 50
Biddulph	2,070	1,892,628	12,537	12,621	4,547	6.6	6 06	2.4	2 19
Caradoc	3,498	3,167,350	23,769	21,757	3,607	7.5	6 80	1.1	1 03
Delaware	1,392	919,630	10,409	13,571	2,465	11.3	7 48	2.7	1 77
Dorchester N.	3,439	2,514,276	22,566	21,652	7,642	9.0	6 56	3.0	2 22
Ekfrid	2,407	2,234,346	19,576	19,107	4,095	8.8	8 13	1.8	1 70
Lobo	2,475	1,837,602	18,504	18,314	5,356	10.1	7 48	2.9	2 17
London	8,101	4,276,967	45,485	42,430	12,105	10.6	5 61	2.8	1 49
McGillivray	2,638	2,628,540	18,972	19,033	5,619	7.2	7 19	2.1	2 13
Metcalfe	1,416	1,359,552	16,581	14,146	3,511	12.2	11 71	2.6	2 48
Mosa	1,859	1,509,110	15,821	15,541	2,515	9.9	8 51	1.6	1 35
Nissouri W.	2,693	2,731,400	23,700	20,879	6,121	8.7	8 80	2.2	2 27
Westminster	4,489	3,784,615	31,969	31,204	7,554	8.4	7 12	2.0	1 68
Williams E.	1,325	1,327,885	13,017	13,387	3,511	9.8	9 82	2.6	2 65
Williams W.	1,354	927,565	11,236	11,316	2,563	12.1	8 30	2.8	1 89
Norfolk:
Charlottetown	2,885	1,403,529	13,951	14,183	1,968	9.9	4 84	1.4	68
Houghton	1,880	490,585	8,567	8,771	2,085	17.5	4 56	4.3	1 11

Middleton	2,369	984,202	11,630	12,965	1,998	11.8	4 91	2.0	84
Townsend	3,762	2,624,875	18,980	18,822	2,132	7.2	5 05	1.6	1 11
Walsingham N.	1,967	745,325	10,665	11,492	2,132	14.3	5 42	2.9	1 08
Walsingham S.	1,726	795,840	12,371	13,111	1,180	15.5	7 17	1.5	68
Windham	3,365	1,752,367	16,880	17,592	2,734	9.6	5 01	1.8	95
Woodhouse	1,832	1,612,310	10,709	10,974	2,734	6.6	5 85	1.7	1 49
Northumberland:									
Alnwick	921	451,960	3,964	4,092	468	8.8	4 30	1.0	51
Brighton	2,238	1,218,275	10,901	10,949	1,879	8.9	4 68	1.5	84
Cramahe	2,311	1,090,344	11,896	12,234	1,930	10.9	5 15	1.8	83
Haldimand	3,558	1,553,660	16,840	17,277	2,887	10.8	4 73	1.9	81
Hamilton	3,550	2,072,764	18,035	16,789	4,712	8.7	5 08	2.3	1 33
Monaghan S.	881	668,785	4,287	3,825	813	6.4	4 87	1.2	92
Murray	2,638	1,174,025	14,147	13,616	4,467	12.0	5 36	3.9	1 69
Percy	2,739	990,375	12,028	12,346	2,543	12.1	4 39	2.6	1 93
Seymour	2,866	1,123,033	16,240	16,129	4,750	14.5	5 67	4.2	1 65
Ontario:									
Brock	3,398	2,736,080	17,460	17,606	4,565	6.4	5 15	1.7	1 35
Mara	2,912	1,658,427	12,185	12,912	3,822	7.3	4 18	2.3	1 31
Pickering	4,921	3,349,644	30,360	29,794	9,962	9.1	6 17	3.0	2 02
Rama	1,269	250,211	5,505	3,921	905	22.0	4 34	3.6	71
Reach	3,236	1,982,391	18,989	18,843	5,809	9.6	5 85	2.9	1 80
Scott	2,101	1,351,663	11,160	11,166	3,113	8.3	5 31	2.3	1 48
Scugog	443	281,810	2,327	2,287	310	8.3	5 25	1.1	70
Thorah	1,366	1,172,849	7,405	7,378	2,473	6.3	5 42	2.1	1 81
Uxbridge	2,479	999,685	11,887	12,050	1,633	11.9	4 80	1.6	66
Whitby E.	2,566	1,651,160	13,336	13,403	3,348	8.1	5 20	2.0	1 30
Whitby	1,751	1,511,986	12,527	12,624	4,020	8.3	7 15	2.7	2 30
Oxford:									
Blandford	1,531	1,189,466	9,110	9,023	3,096	7.7	5 95	2.6	2 02
Blenheim	4,184	3,120,054	25,419	24,346	7,391	7.8	5 84	2.4	1 76
Dereham	3,394	3,192,847	29,246	29,191	9,564	9.2	8 62	3.0	2 82
Nissouri E.	2,508	2,800,968	17,891	17,899	7,266	6.4	7 12	2.6	2 90
Norwich N.	2,183	1,659,290	15,985	16,128	6,658	9.6	7 32	4.0	3 05
Norwich S.	1,912	1,138,467	12,928	12,999	6,417	11.4	6 76	5.6	3 35
Oxford E.	2,036	1,517,027	13,566	13,200	4,661	8.9	6 66	3.1	2 29
Oxford N.	1,195	932,609	8,085	8,157	2,141	8.7	6 77	2.3	1 79
Oxford W.	2,022	1,410,027	11,987	12,031	4,078	8.5	5 93	2.9	3 40
Zorra E.	2,729	4,060,080	28,558	28,595	12,693	7.0	7 66	3.1	3 40
Zorra W.	2,220	2,901,017	19,227	19,185	7,911	6.6	8 66	2.7	3 56
Peel:									
Albion	2,224	1,752,155	14,571	14,565	3,965	8.3	6 55	2.3	1 78
Caledon	3,667	1,809,850	18,245	18,324	5,880	10.1	4 98	3.3	1 60
Chingacousy	4,760	3,960,788	22,151	22,560	4,620	5.6	6 07	1.2	1 26
Toronto	874	2,791,920	24,420	23,712	4,410	8.6	5 07	1.6	93
Toronto Gore	874	789,111	6,948	6,904	2,486	8.8	7 95	3.2	2 84

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1905—Continued.

Township Municipality	Assessed area in acres (unstatsd)	Assessed population, 1905	Total values assessed, 1905	Total municipal and school taxes 1905		Mills on \$	Total tax imposed per head	Mill rate for roads and bridges	Roads and bridges ex- penditure per head
				Imposed	Received				
Perth:	Acres		\$	\$	\$		\$ c.		\$ c.
Blanshard	2,352	2,498,600	17,830	18,086	6,210	7.1	7 58	2.5	2 64
Downie	2,653	2,782,191	20,522	20,528	6,669	7.4	7 74	2.4	2 52
Easthope N.	2,093	2,418,849	14,077	14,203	2,785	5.8	6 72	1.2	1 30
Easthope S.	1,883	1,862,828	10,417	10,414	2,268	5.6	5 53	1.2	1 23
Ellice	2,988	2,538,047	23,293	24,261	4,851	9.2	7 80	1.9	1 62
Elma	3,523	3,473,536	26,458	26,749	3,429	7.6	7 51	1.0	1 62
Fullarton	2,076	2,395,320	16,420	17,590	4,485	6.9	7 91	1.9	2 16
Hibbert	2,132	1,623,041	16,093	16,070	3,575	9.9	7 55	2.2	1 76
Logan	2,805	2,700,600	21,370	21,490	5,449	7.9	7 62	2.0	1 94
Mornington	2,903	2,382,906	22,420	23,432	5,857	9.4	7 72	2.5	2 01
Wallace	2,595	1,992,450	13,115	13,952	1,877	6.6	5 05	.9	73
Peterborough:									
Asphodel	1,603	913,080	9,249	9,351	2,629	10.1	5 77	2.9	1 64
Belmont and Methuen	1,869	245,809	6,833	8,495	679	27.8	3 66	2.8	36
Burleigh and Anstruther	707	112,397	2,695	1,954	475	24.0	3 81	4.2	67
Chandos	725	84,038	2,737	2,953	173	32.6	3 78	2.1	24
Douro	1,560	807,716	8,126	8,263	1,469	10.1	5 21	1.8	94
Dummer	1,583	623,685	6,854	6,981	843	11.0	4 33	1.4	53
Ennismore	830	354,315	3,633	2,856	255	10.3	4 38	.7	31
Galway and Cavendish	1,020	50,580	1,692	1,585	41	33.5	1 66	.8	40
Harvey	942	226,341	4,253	4,771	119	18.8	4 51	.5	13
Monaghan N.	882	615,725	4,967	4,871	1,256	8.1	5 63	2.0	1 43
Otonabee	3,004	2,008,697	17,518	24,473	3,498	8.7	5 83	1.7	1 15
Smith	2,503	1,592,890	13,769	14,316	3,501	8.6	5 50	2.1	1 40
Prescott:									
Alfred	3,292	346,800	9,584	9,499	1,892	27.6	2 91	5.5	58
Caledonia	1,675	1,071,762	8,292	8,080	1,476	7.7	4 95	1.4	1 88
Hawkesbury E.	4,506	447,150	13,532	13,497	2,411	30.3	3 00	5.4	54
Hawkesbury W.	1,565	266,014	8,691	8,322	3,757	32.7	5 55	1.4	2 40
Longueuil	1,957	165,600	2,837	3,044	215	17.1	2 96	1.3	22
Plantagenet N.	3,701	1,452,433	13,056	14,130	1,790	9.0	3 53	1.2	48
Plantagenet S.	3,055	959,197	11,084	10,756	1,745	11.6	3 63	1.8	57
Prince Edward:									
Ameliasburg	2,430	1,430,220	12,920	13,880	814	9.0	5 32	.6	33

Athol	997	456,485	4,949	4,941	436	10.8	4.96	1.0	4.4
Hallowell	2,892	1,236,635	13,037	13,163	1,036	10.5	4.51	.8	36
Hillier	1,542	899,522	7,263	7,283	355	8.1	5.41	.4	26
Marysburg N.	1,097	497,175	4,630	4,333	260	9.3	4.22	.4	24
Marysburg S.	1,142	328,975	6,285	5,197	310	19.1	5.50	.9	27
Sophiasburg	1,632	999,745	9,337	9,417	959	9.3	5.72	1.0	59
Renfrew:									
Admaston	2,155	784,975	7,195	6,533	1,582	9.2	3.34	2.0	74
Algona S.	888	143,250	1,459	1,363	23	10.2	2.64	.6	26
Alice and Fraser ..	2,008	584,546	3,725	3,422	298	6.4	1.86	.5	15
Bagot and Blythfield	1,396	153,630	4,010	3,899	294	26.1	2.87	1.9	21
Bromley	2,059	1,422,778	7,529	7,635	1,063	5.3	3.66	.7	52
Brougham	589	74,570	823	899	80	11.0	1.40	1.1	14
Brudenell and Lyndoch	1,324	189,185	2,968	3,011	118	15.7	2.24	.6	89
Grattan	1,870	382,040	3,669	1,564	297	9.6	1.96	.8	16
Griffin and Matawahan	653	52,500	1,197	983	95	22.8	1.83	1.8	15
Hagarty and Richards	2,914	424,059	5,182	6,124	538	12.2	1.78	1.3	18
Head, Clara, and Maria	386	30,258	878	690	19	29.0	2.27	.6	49
Horton	1,310	538,513	4,153	4,385	662	7.7	3.17	1.2	50
McNab	3,458	1,168,704	13,339	12,701	1,421	11.4	3.86	1.2	41
Pembroke	836	355,557	2,544	2,050	278	7.2	3.04	.8	33
Petewawa and McKay	1,044	89,059	1,578	1,492	26	17.7	1.51	.3	25
Radcliffe	359	44,310	1,503	1,031	78	33.9	4.19	1.8	22
Raglan	770	57,175	2,300	2,008	213	40.2	2.99	3.7	28
Rolph	1,000	184,756	2,938	3,228	163	15.9	2.94	.9	16
Ross	1,895	847,950	7,890	6,262	2,800	9.3	4.16	3.3	48
Sebastopol	645	55,875	1,436	1,401	32	25.7	2.23	.9	53
Stafford	1,070	256,245	3,726	3,482	564	14.5	3.48	2.2	50
Westmeath	3,226	1,747,256	14,498	13,306	3,302	8.3	4.49	1.9	102
Wilberforce and Algona	2,405	802,367	6,283	6,212	1,079	7.8	2.61	1.3	45
Russell:									
Cambridge	3,189	454,064	14,969	15,110	3,238	33.0	4.69	.7	101
Clarence	5,257	1,135,805	17,672	17,735	2,870	15.6	3.36	2.5	55
Cumberland	3,593	446,327	17,921	21,672	3,939	40.2	4.99	.9	110
Russell	2,952	94,753	16,849	15,027	1,125	24.3	5.71	1.2	38
Simcoe:									
Adjala	2,233	849,540	11,934	11,471	3,994	14.0	5.34	4.7	179
Essa	4,033	1,317,254	17,853	17,610	5,188	13.6	4.43	3.9	129
Flos	2,098	1,768,796	19,903	20,021	5,013	11.3	5.93	2.8	149
Gwillimbury W.	3,098	1,777,859	11,659	11,926	1,533	6.6	5.56	.9	73
Innisfil	3,555	1,694,101	19,169	20,230	3,593	11.3	5.39	2.1	101
Matchedash	413	59,900	1,300	861	158	21.7	3.15	2.6	38
Medonte	3,886	1,361,438	16,480	16,558	4,339	12.1	4.24	3.2	111
Nottawasaga	4,735	2,607,849	25,520	25,869	6,921	9.8	5.39	2.7	146
Orillia	3,709	628,140	15,811	12,606	3,751	25.2	4.26	6.0	101

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1905—Continued.

Township Municipality	Assessed area in acres (unstate)	Assessed population, 1905	Total values assessed, 1905	Total municipal and school taxes 1905		Total expend- iture on roads and bridges, 1905	Mills on \$	Total tax imposed per head	Mill rate for roads and bridges	Roads and bridges ex- penditure per head
				Imposed	Received					
	Acres		\$	\$	\$	\$		\$ c.		\$ c.
Oro	3,431	1,531,047	14,344	14,958	2,281	9.4	4 18	1.5	67
Sunnidale	2,049	1,861,113	10,451	10,734	2,196	12.1	5 10	2.6	1 07
Tay	5,329	1,465,030	18,219	16,059	1,657	12.4	3 42	1.1	31
Tecumseth	3,026	1,696,487	21,794	21,980	5,403	12.8	7 20	3.2	1 79
Tiny	4,060	1,047,114	14,249	15,527	1,247	13.6	3 51	1.1	31
Tossonortio	1,560	750,085	8,603	8,444	2,626	11.5	5 51	3.5	1 68
Vespra	2,596	1,177,655	13,710	13,647	2,210	11.6	5 28	1.9	83
Stormont:										
Cornwall:										
Finch	5,891	1,781,855	20,872	21,216	3,666	11.7	3 54	2.1	62
Osnabrock	3,759	682,825	22,302	25,083	11,668	32.7	5 93	17.1	3 10
Roxborough	4,610	2,050,928	21,868	19,696	2,617	10.7	4 74	1.3	57
Victoria:										
Bexley	796	270,429	4,316	5,106	365	16.0	5 42	1.2	46
Carden	725	242,964	2,981	2,857	387	12.3	4 11	1.6	53
Dalton	527	52,045	1,433	208	1,693	27.5	2 72	4.0	39
Eldon	2,505	1,796,728	12,201	12,851	2,612	6.8	4 87	1.5	1 04
Emily	1,963	1,370,316	12,438	12,455	2,002	9.1	6 34	1.5	1 02
Fenelon	2,122	781,200	10,084	1,591	1,591	12.9	4 75	2.0	75
Laxton, Digby and Longford	701	148,850	3,033	2,860	265	20.4	4 33	1.8	38
Mariposa	3,653	2,960,898	25,421	25,030	5,311	8.6	6 96	1.8	1 45
Ops	2,154	1,820,465	16,750	16,758	4,852	9.2	7 78	2.7	2 26
Somerville	1,739	256,235	7,290	6,867	1,282	28.5	4 19	5.0	74
Vernulam	1,901	514,176	9,100	9,208	1,946	17.7	4 79	3.8	1 02
Waterloo:										
Dumries N.	1,874	2,044,818	12,529	13,042	6,394	6.1	6 69	3.0	3 40
Waterloo	6,593	3,993,230	30,061	30,287	4,242	7.5	4 56	1.1	64
Wellesley	4,908	3,872,108	24,151	25,303	6,100	8.4	4 92	2.1	1 24
Wilnot	4,548	2,894,810	23,527	23,481	9,156	8.1	5 17	3.2	2 01
Woolwich	4,106	2,831,284	24,027	24,018	14,405	8.5	5 85	5.1	3 51
Welland:										
Bertie	3,011	1,742,000	18,894	20,417	8,472	10.8	6 27	4.9	2 81
Crowland	989	428,016	5,927	5,664	993	13.8	5 99	2.3	1 01
Humberstone	2,715	962,670	10,313	11,383	1,855	10.7	3 80	1.2	44
Pelham	2,384	1,152,535	11,520	11,584	2,819	10.0	4 83	2.4	1 18

Stamford	1,893	1,460,200	16,714	14,051	5,375	11.4	8.83	3.7	2.84
Thorold	1,684	654,249	7,979	8,302	595	12.2	4.74	9	35
Wainfleet	2,639	1,237,105	13,204	13,620	4,969	10.7	5.00	4.0	1.88
Willoughby	890	479,630	5,366	4,574	386	11.2	6.03	.8	43
Wellington:									
Arthur	2,646	2,528,725	15,268	15,264	3,722	6.0	5.77	1.5	1.40
Eramosa	2,411	2,088,780	13,970	20,509	3,829	6.7	5.79	1.8	1.59
Erin	2,965	2,101,037	15,554	16,057	1,876	7.4	5.25	.9	64
Garafraxa W.	2,074	1,721,412	16,409	12,339	4,226	9.5	7.91	2.5	2.04
Guelph	2,225	1,952,605	12,234	12,735	3,709	6.3	5.50	1.9	1.67
Luther W.	1,914	1,824,482	12,626	12,834	2,087	6.9	6.60	1.1	1.09
Maryborough	2,751	2,349,069	18,043	19,070	2,703	7.7	5.56	1.2	1.98
Minto	2,835	2,421,035	16,820	16,789	3,448	6.9	5.93	1.4	1.22
Nichol	1,677	1,438,353	7,576	8,384	1,248	5.3	4.52	.9	74
Peel	3,469	2,832,750	22,939	23,180	10,018	8.1	6.61	3.5	2.89
Pikington	1,239	1,279,904	8,825	9,012	1,637	6.9	7.12	1.3	1.32
Puslinch	2,707	1,476,902	14,495	11,603	4,036	9.8	5.35	2.7	1.49
Wentworth:									
Ancaster	3,569	2,263,204	20,248	21,202	4,052	8.9	5.67	1.8	1.14
Barton	3,941	1,556,613	12,375	14,307	3,512	9.1	3.14	2.6	89
Beverly	3,693	2,773,474	20,426	18,812	3,532	7.4	5.53	1.3	96
Binbrook	1,164	1,013,555	8,141	8,375	946	8.0	6.99	.9	81
Flamborough E.	2,354	1,648,995	13,899	14,050	3,116	8.4	5.90	1.9	1.32
Flamborough W.	2,587	1,751,039	15,338	15,782	2,991	8.8	5.93	1.7	1.15
Glanford	1,499	1,054,855	7,953	8,294	470	7.5	5.31	.4	31
Salftree	3,222	2,508,759	21,581	22,994	5,575	8.6	6.70	2.2	1.73
York:									
Etobicoke	4,206	2,010,408	27,728	28,768	11,373	13.8	6.59	5.6	2.70
Georgina	1,619	898,180	6,285	6,274	1,648	7.0	3.88	1.8	1.02
Gwillimbury E.	3,352	1,306,420	15,152	14,723	3,249	11.6	4.52	2.5	97
Gwillimbury N.	1,483	928,695	6,875	6,855	678	7.4	4.64	.7	46
King	4,721	2,794,769	29,745	28,184	13,919	10.6	6.30	5.0	2.94
Markham	5,022	3,245,025	31,690	31,211	8,960	9.8	6.31	2.8	1.78
Scarborough	3,517	2,167,835	19,807	20,208	5,737	9.1	5.63	2.6	1.63
Vaughan	3,928	2,950,275	27,222	27,132	11,807	9.2	6.93	4.0	3.00
Whitechurch	3,155	1,263,039	14,686	13,674	2,353	9.2	4.76	1.4	75
York	11,550	6,953,780	95,028	94,752	31,735	13.7	8.23	4.5	2.70

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1910.

Township Municipality	Assessed area in acres	Assessed population, 1910	Total values assessed, 1910	Total municipal and school taxes 1910		Total expend- ture on roads and bridges, 1910	Mills on \$	Total tax imposed per head	Mill rate for roads and bridges	Roads and bridges ex- penditure per head
				Imposed	Received					
Brant:	Acres		\$	\$	\$	\$		\$ c.		\$ c.
Brantford.....	71,546	5,884	4,501,296	42,403	41,839	13,242	9.4	7 21	2.9	2 25
Burford.....	66,601	3,987	2,329,318	33,395	33,396	9,897	14.3	8 38	4.8	2 48
Dumfries, S.....	46,559	2,311	2,518,988	19,013	19,052	3,017	7.5	8 23	1.2	1 31
Oakland.....	10,610	756	462,306	4,434	4,426	1,098	9.6	5 87	2.2	1 45
Onondaga.....	20,298	972	772,310	7,661	7,658	2,392	9.8	7 88	3.1	2 45
Bruce:										
Albemarle.....	57,787	1,103	380,715	7,129	6,376	3,211	18.7	6 46	8.4	2 91
Amabel.....	65,090	3,559	792,013	14,125	12,882	3,775	17.8	3 97	4.8	1 06
Arran.....	54,084	1,984	1,492,310	14,981	14,984	3,036	10.0	7 55	2.0	1 53
Brant.....	73,853	3,145	2,503,645	19,645	20,723	3,381	7.8	6 25	1.3	1 08
Bruce.....	67,380	2,332	1,830,097	17,365	17,236	4,057	9.5	7 45	2.2	1 74
Carriak.....	59,431	3,959	2,774,630	21,180	21,181	3,069	7.6	5 35	1.2	78
Culross.....	56,717	2,356	1,747,696	14,608	14,615	2,053	8.4	6 20	1.2	87
Eastnor.....	55,533	1,509	592,018	8,501	8,723	2,256	14.4	5 63	3.8	1 50
Elderslie.....	53,326	1,844	1,869,475	15,793	15,996	2,962	8.4	8 56	1.6	1 61
Grenock.....	62,641	2,396	1,797,162	17,740	17,580	3,765	9.9	7 40	2.1	1 57
Huron.....	58,094	2,883	2,583,460	21,051	20,578	4,232	8.1	7 30	1.6	1 47
Kincardine.....	59,036	2,301	1,829,650	19,477	19,415	3,216	10.6	8 46	1.8	1 40
Kinloss.....	46,123	1,690	1,522,552	12,139	12,139	2,123	8.0	7 18	1.4	1 26
Lindsay.....	66,762	690	141,680	3,276	4,302	1,951	23.1	4 75	13.8	2 83
St. Edmunds.....	60,055	363	82,050	1,981	1,979	1,040	24.1	5 46	12.7	2 87
Saugeen.....	36,764	1,308	1,004,849	10,113	10,105	1,317	10.1	7 73	1.3	1 01
Carleton:										
Fitzroy.....	60,183	2,159	1,427,510	14,412	19,885	3,178	10.1	6 68	2.2	1 47
Gloucester.....	83,330	5,793	1,755,903	34,464	32,527	5,236	19.6	5 95	3.0	90
Goulburn.....	64,786	2,138	1,890,024	14,399	14,134	1,740	7.6	6 73	.9	81
Gower, N.....	32,918	1,718	1,046,220	12,302	12,247	1,446	11.8	7 16	1.4	84
Huntley.....	64,443	1,979	1,208,140	14,354	13,383	1,549	11.9	7 25	1.3	78
March.....	28,070	916	811,217	5,975	6,905	860	7.4	6 52	1.1	94
Marlborough.....	57,027	1,291	579,550	8,897	8,283	704	15.4	6 89	1.2	55
Nepean.....	56,872	4,517	2,888,928	32,258	28,210	8,439	11.2	7 14	2.9	1 87
Osgoode.....	90,901	3,949	2,099,930	41,422	31,210	4,297	19.7	10 49	2.0	1 09
Torbolton.....	25,419	747	173,825	4,293	5,445	354	24.7	5 75	2.0	47

Dufferin:	63,400	2,056	1,872,130	16,282	18,184	2,222	8.7	7.92	1.2	1.08
Amaranth.....	40,865	1,568	1,142,393	11,185	10,145	3,441	9.8	7.13	3.0	2.19
Garafraza, E.....	38,490	1,334	1,176,319	14,038	13,999	3,230	11.9	10.52	2.8	2.42
Luther, E.....	74,596	2,884	1,773,192	18,794	17,186	4,756	10.6	6.52	2.7	1.65
Melanchton.....	69,119	2,577	2,261,450	20,773	20,860	5,669	9.2	8.06	2.5	2.20
Mono.....	66,815	2,659	1,473,925	17,588	16,801	3,830	11.9	6.61	2.6	1.44
Mulmur.....										
Dundas:										
Matilda.....	62,562	3,436	1,398,165	25,193	26,921	4,063	18.0	7.33	2.9	1.18
Mountain.....	57,611	2,649	1,577,283	29,847	27,282	3,866	18.9	11.27	2.5	1.46
Williamsburg.....	60,633	3,342	1,503,950	25,762	25,948	5,255	17.1	7.71	3.5	1.57
Winchester	57,017	3,071	1,464,021	35,292	36,432	6,800	24.1	11.49	4.6	2.21
Durham:										
Cartwright.....	37,841	1,522	865,853	10,545	10,470	1,340	12.2	6.93	1.5	.88
Cavan.....	61,377	3,215	1,571,300	19,429	19,801	5,588	12.4	8.76	3.6	2.52
Clarke.....	68,706	3,167	2,025,948	20,579	20,718	4,902	10.2	6.50	2.4	1.54
Darlington (1908).....	68,717	3,488	2,378,653	22,800	23,147	4,160	9.6	6.54	1.7	1.19
Hope.....	61,856	2,778	2,158,980	18,063	17,593	4,042	8.4	6.50	1.9	1.46
Manvers.....	69,752	2,651	897,404	15,063	15,175	2,667	16.8	5.68	2.1	1.01
Elgin:										
Aldborough (1909).....	75,159	3,141	1,879,011	30,491	34,889	4,273	16.2	9.71	2.3	1.36
Bayham.....	56,747	3,250	1,239,570	27,857	27,551	4,373	22.5	8.57	3.5	1.35
Dorchester, S.....	30,564	1,525	1,716,280	19,253	19,330	4,323	11.2	12.62	2.5	2.86
Dunwich.....	69,159	2,984	2,522,150	28,826	29,849	354	11.4	9.66	.1	1.12
Malahide.....	62,445	3,258	2,589,666	31,026	31,504	6,089	12.0	9.52	2.4	1.85
Southwold.....	72,710	3,591	3,116,929	38,815	36,169	12,077	12.5	10.81	3.9	3.36
Yarmouth.....	69,507	4,618	3,513,036	53,918	51,657	21,866	15.3	11.68	6.2	4.73
Essex:										
Anderson.....	23,096	1,843	833,719	12,902	13,702	4,531	15.5	7.00	5.4	2.46
Colchester, N.....	30,096	1,861	879,404	20,820	20,200	3,540	23.7	11.19	4.0	1.90
Colchester, S.....	34,348	2,680	1,162,901	25,403	24,849	2,356	21.8	9.47	2.0	.87
Gosfield, N.....	27,997	1,911	1,355,091	22,757	23,244	4,134	16.8	11.91	3.1	2.16
Gosfield, S.....	29,822	2,148	1,406,015	20,154	19,366	5,586	14.3	9.38	4.0	2.60
Maldstone.....	44,440	2,762	1,870,642	29,209	25,458	6,442	15.6	10.58	3.4	2.33
Maldstone.....	21,555	1,304	972,416	12,842	13,063	2,934	13.2	9.85	3.0	2.25
Mersea.....	59,175	3,897	2,416,588	43,638	39,995	4,607	18.1	11.20	1.9	1.18
Rochester.....	32,639	1,977	1,579,468	20,537	20,340	4,607	18.1	10.39	3.0	2.42
Rochester, E.....	18,710	3,175	1,068,316	22,309	21,816	(a) 10,674	20.9	7.03	9.9	3.36
Sandwich, S.....	23,507	1,587	864,635	13,068	13,480	3,254	15.1	8.23	3.8	2.05
Sandwich, W.....	22,513	2,476	1,070,306	18,914	19,217	6,348	17.7	7.64	5.9	2.56
Tilbury, N.....	27,164	1,943	984,859	15,155	14,665	2,351	15.4	7.80	2.4	1.22
Tilbury, W.....	22,627	1,809	1,007,861	16,200	16,208	2,194	16.1	8.96	2.2	1.21
(Petee Island.....)	9,857	652	341,680	12,418	13,895	335	36.3	19.05	1.0	.51

(a) Exclusive of Government grant for roads, \$800.00
 2,000.00
 (b)

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1910—Continued.

Township Municipality	Assessed area In acres	Assessed population, 1910	Total values assessed, 1910	Total municipal and school taxes 1910		Total expend- iture on roads and bridges, 1910	Mills on \$	Total tax imposed per head	Mill rate for roads and bridges	Roads and bridges ex- penditure per head
				Imposed	Received					
Frontenac:	Acres		\$	\$	\$	\$		\$ c.		\$ c.
Barrie.....	25,767	450	61,065	1,493	1,050	22	24.2	3 32	4	49
Bedford.....	65,189	1,207	303,539	6,752	7,721	1,075	22.2	5 59	3.5	89
Clarendon.....	49,354	745	75,621	2,460	2,631	39	32.5	3 30	5	05
Hinchinbrooke.....	65,810	1,134	207,935	6,087	5,726	811	29.3	5 37	3.9	72
Howe Island.....	8,002	299	80,083	2,212	2,063	451	27.6	7 40	5.6	51
Kennebec.....	44,966	978	103,417	3,651	3,135	434	35.3	3 73	4.2	44
Kingston.....	52,167	2,427	1,218,403	26,610	25,914	6,713	21.8	10 96	5.5	277
Loughborough.....	50,841	1,707	408,950	11,835	12,162	1,163	28.9	6 93	2.8	68
Olden.....	53,239	969	228,103	5,104	5,231	1,590	22.4	5 27	7.0	1 64
Oso.....	42,659	959	116,696	4,715	4,588	254	40.4	4 92	2.2	25
Palmerston.....	56,093	887	78,956	2,661	2,856	338	33.7	3 00	4.3	38
Pittsburg.....	47,481	1,912	807,454	20,347	22,845	2,244	25.2	10 64	2.8	1 17
Portland.....	53,391	1,957	902,306	17,356	15,826	3,291	19.2	8 87	3.6	1 68
Storrington.....	55,816	1,761	427,323	16,028	14,004	1,677	37.5	9 10	3.9	95
Wolfe Island.....	31,936	1,558	597,868	12,076	10,282	1,325	20.2	7 75	2.2	85
Glengarry:										
Charlottenburg.....	81,012	4,277	2,231,130	28,655	27,302	4,981	12.8	6 70	2.2	1 16
Kenyon.....	77,909	3,804	1,417,236	20,884	20,890	2,244	14.7	5 49	1.8	63
Lancaster.....	57,430	3,509	2,329,608	17,082	18,461	1,076	7.3	4 87	5	31
Lochiel.....	71,506	4,292	2,025,583	19,841	20,291	4,242	9.8	4 62	2.1	99
Grenville:										
Augusta.....	74,656	3,136	1,301,335	21,822	20,889	3,772	16.8	6 96	2.9	1 20
Edwardsburg.....	70,135	3,113	1,197,577	20,667	25,252	3,491	17.3	6 64	2.9	1 12
Gower, S.....	21,703	726	318,490	5,236	4,723	721	16.4	7 21	2.3	99
Oxford-on-Rideau.....	59,446	2,351	813,214	13,541	13,167	1,262	16.7	5 76	1.6	54
Wolford.....	46,355	1,262	932,369	10,175	10,403	1,330	10.9	8 06	1.4	1 86
Grey:										
Artemesia.....	68,361	2,903	1,268,379	20,997	22,190	2,708	16.6	4 33	2.1	93
Bentick.....	74,862	2,648	1,512,965	13,966	14,887	2,239	9.2	5 27	1.5	85
Collingwood.....	66,287	3,009	1,392,218	20,204	20,113	4,898	14.5	6 71	3.5	1 63
Derby.....	40,250	1,845	1,053,959	11,268	11,284	3,991	10.7	6 11	3.8	2 38
Egremont.....	72,459	2,831	1,936,432	17,257	17,252	3,644	8.9	6 10	1.9	1 29
Euphrasia.....	71,818	2,590	1,280,435	16,858	16,918	2,898	13.2	6 51	2.3	1 12
Glenelg.....	67,340	2,156	750,480	11,824	11,874	3,368	15.8	5 48	4.5	1 56
Holland (1909).....	68,779	2,380	1,315,939	12,051	10,600	1,538	9.2	5 06	1.2	65

Keppel.....	92,104	3,150	777,058	17,373	17,973	3,125	22.4	5 52	4.0	99
Normanby.....	67,554	3,340	2,064,293	17,072	16,994	1,744	8.3	5 11	.8	55
Osprey.....	70,760	2,705	1,012,810	15,269	15,668	4,187	15.1	5 64	4.1	1
Proton.....	81,784	2,554	1,500,180	21,134	22,722	4,497	14.1	8 27	3.0	176
St. Vincent.....	63,527	2,585	1,367,285	20,928	19,947	5,708	15.3	8 10	4.9	2 59
Sarawak.....	10,514	703	205,165	4,109	4,265	688	20.0	5 84	3.4	98
Sullivan.....	73,528	2,372	1,625,645	14,394	14,372	2,426	8.9	6 07	1.5	1 02
Sydenham.....	75,726	3,075	1,868,621	20,494	20,495	4,736	11.0	6 66	2.5	1 54
Haldimand:										
Canborough.....	21,577	862	513,908	6,523	6,550	1,972	12.7	7 57	3.8	2 29
Cayuga, N.....	32,887	1,454	946,991	9,718	10,147	2,189	10.3	6 68	2.3	1 51
Cayuga, S.....	13,249	669	412,005	4,039	3,897	339	9.8	6 04	.8	51
Dunn.....	14,821	726	454,139	4,745	4,797	354	10.4	6 54	.8	49
Moulton.....	27,288	1,841	657,695	9,559	9,626	894	14.2	5 08	1.4	49
Oneida.....	32,607	1,290	1,048,774	9,858	9,822	733	9.4	7 64	.7	57
Rainham.....	25,686	1,776	793,197	8,849	8,726	946	11.2	4 98	1.2	53
Seneca.....	41,781	1,659	1,223,718	12,108	12,030	1,757	9.9	7 30	1.4	1 06
Sherbrooke.....	4,646	341	162,291	3,309	3,261	86	20.4	9 70	.5	25
Walpole.....	66,550	3,213	2,000,705	34,665	34,728	12,811	17.3	10 79	6.4	3 99
Haliburton:										
Anson & Hindon.....	12,965	240	36,680	1,076	933	38	29.3	4 48	1.0	16
Cardiff.....	26,736	572	59,850	2,496	2,123	183	41.7	4 36	3.1	32
Dysart (and northwards).....	363,606	1,158	621,362	10,517	19,441	3,430	16.9	9 08	5.5	2 96
Glamorgan.....	24,001	488	32,388	1,577	2,090	23	48.7	3 23	.7	05
Lutterworth.....	24,899	362	38,140	1,654	1,512	51	43.4	4 57	1.3	14
Mindon.....	38,291	1,001	91,054	3,311	3,339	160	36.4	3 31	1.8	16
Monmouth.....	28,820	656	85,388	2,405	2,525	38	28.2	3 67	.4	06
Sherborne (and northwards).....	13,693	231	56,536	1,549	1,719	364	27.4	6 71	6.4	1 58
Snowdon.....	35,628	655	69,815	2,611	2,361	347	37.4	3 99	5.0	53
Stanhope.....	19,096	513	43,361	1,459	1,683	129	33.6	2 84	3.0	25
Hatton:										
Esquesing.....	66,403	3,513	2,246,155	22,368	22,260	2,984	10.0	6 37	1.3	85
Nassagaweya.....	44,784	2,008	1,442,115	10,525	10,589	1,583	7.3	5 09	1.1	77
Nelson.....	46,346	2,622	2,120,144	18,514	18,735	4,163	8.7	7 06	1.9	1 59
Trafalgar.....	67,059	3,431	2,745,620	28,882	28,025	8,154	10.5	8 42	3.0	2 38
Hastings:										
Bangor, W., & McClure.....	41,103	1,085	68,111	3,168	3,312	368	46.5	2 92	5.4	34
Carlow.....	27,338	673	72,561	2,332	2,459	326	32.1	3 47	4.5	48
Dungannon.....	39,840	680	87,713	3,794	3,408	851	42.6	5 49	9.7	1 25
Elizewir & Grimssthorpe.....	66,151	1,248	273,467	6,548	6,734	1,134	23.9	5 25	4.1	91
Faraday.....	51,824	880	80,600	3,248	4,105	597	40.3	3 69	7.4	68
Hungerford.....	89,405	3,415	1,647,324	20,942	18,434	1,183	12.7	6 13	.7	35
Huntingdon.....	54,020	2,017	911,507	11,729	14,629	475	12.9	5 82	.5	24
Limerick.....	45,140	439	63,885	1,320	1,169	673	20.7	3 01	10.5	1 53
Madoc.....	65,359	2,453	850,760	16,814	14,347	1,261	19.8	6 85	1.5	51

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1910—Continued.

Township Municipality	Assessed area in acres	Assessed population, 1910	Total values assessed, 1910	Total municipal and school taxes 1910		Mills on \$	Total tax imposed per head	Mill rate for roads and bridges	Roads and bridges ex- penditure per head
				Imposed	Received				
	Acres		\$	\$	\$		\$ c.		\$ c.
Marmora & Lake.....	109,611	1,618	619,945	9,011	8,344	14.5	5 57	1.4	53
Mayo.....	21,320	504	37,381	2,092	3,847	56.0	4 15	10.0	67
Monteagle & Herschel.....	70,007	2,130	91,036	4,726	4,075	51.9	2 22	5.6	24
Rawdon.....	65,933	2,805	1,248,553	20,601	18,873	16.5	7 34	1.1	41
Sidney.....	69,329	4,115	2,712,768	29,783	28,386	11.0	7 24	1.8	1 19
Thurlow.....	53,682	3,736	4,337,175	29,584	22,541	6.8	7 94	.4	46
Tudor & Cashel.....	61,938	816	116,926	3,069	3,612	26.2	3 76	13.8	1 97
Tyendinaga.....	78,601	2,940	1,589,527	22,132	21,444	13.9	7 53	1.1	59
Wollaston.....	51,288	695	139,517	3,285	2,885	23.5	4 73	11.0	2 21
Huron:									
Ashfield.....	64,017	2,693	2,479,175	16,098	14,803	6.5	5 98	1.2	1 15
Colborne.....	33,380	1,472	1,368,425	10,809	10,701	7.9	7 34	1.6	1 46
Goderich.....	52,336	1,870	1,705,175	13,209	13,099	7.7	7 06	1.3	1 15
Gray.....	64,822	2,848	2,805,400	28,905	28,898	10.3	10 15	1.1	1 08
Hay.....	52,486	3,071	2,381,465	21,094	20,898	8.9	6 87	2.1	1 66
Howick.....	67,552	3,565	2,875,350	25,200	25,264	8.8	7 07	2.7	2 22
Hullett.....	53,478	2,432	1,983,550	17,543	17,390	8.8	7 21	1.5	1 24
McKillop.....	52,170	2,198	2,248,970	22,800	23,825	10.1	10 37	3.0	3 10
Morris.....	54,873	2,125	2,100,412	20,559	21,199	9.8	9 67	2.5	2 50
Stanley.....	43,351	1,785	1,955,710	16,071	16,228	8.2	9 00	2.1	2 25
Stephen.....	56,808	3,508	2,722,122	24,677	24,712	9.1	7 03	2.7	2 19
Tuckersmith.....	40,735	2,197	2,109,868	20,004	17,191	9.5	9 10	1.6	1 49
Turnberry.....	35,660	1,655	1,329,765	13,399	12,469	10.1	8 10	3.3	2 69
Usborne.....	42,682	1,850	2,417,445	19,668	26,043	8.1	10 63	1.6	2 10
Wawanosh, E.....	41,730	1,575	1,569,445	12,077	12,203	7.7	7 67	1.1	1 79
Wawanosh, W.....	41,699	1,723	1,606,511	10,259	10,243	6.4	5 95	1.6	1 47
Kent:									
Camden.....	40,631	2,164	1,513,750	20,450	21,057	13.5	9 45	2.8	1 98
Chatham.....	84,009	5,525	3,433,508	54,829	53,266	16.0	9 92	1.0	60
Dover.....	66,617	4,140	2,863,303	37,917	32,747	13.2	8 16	1.0	66
Harwich.....	88,296	4,817	3,968,483	45,426	45,731	11.4	9 43	3.6	2 99
Howard.....	58,031	2,760	2,422,620	29,016	29,917	12.0	10 51	2.3	2 02
Orford.....	49,827	2,698	1,794,107	25,402	25,601	14.2	9 42	1.9	3 32
Raleigh.....	71,211	3,888	2,786,085	46,360	46,527	16.6	11 92	1.3	93
Romney.....	26,264	1,737	967,504	18,835	31,222	19.5	10 84	1.5	86

Tilbury, E.	54,461	2,834	1,822,917	50,049	45,037	6,822	27.5	17.66	3.7	2.41
Zone	26,907	1,053	692,983	9,137	8,141	1,520	13.2	8.68	2.2	1.44
Lambton:										
Bosanquet	71,019	2,666	2,158,052	20,587	20,542	3,107	9.5	9.09	1.4	1.38
Brooke	74,062	2,927	2,517,595	36,350	32,792	9,242	14.4	12.42	3.7	3.16
Dawn	65,530	2,730	1,929,115	28,901	22,678	1,737	15.0	10.59	.9	64
Enniskillen	82,116	3,447	2,641,910	44,497	44,497	8,559	16.8	12.86	3.2	2.48
Euphemia	39,179	1,645	1,028,596	17,306	18,096	3,412	16.8	10.52	3.8	2.07
Moore	72,531	3,658	2,903,580	38,266	44,966	8,043	13.2	10.46	3.3	2.20
Plympton	75,015	3,035	2,494,313	27,819	27,588	5,476	11.2	9.17	2.2	1.80
Sarnia	38,668	1,894	1,239,565	19,400	20,433	7,354	15.7	10.24	5.9	3.88
Sombra	72,304	3,588	1,728,810	32,144	33,596	4,616	18.6	8.96	2.7	1.29
Warwick	70,189	2,581	2,421,704	22,575	22,651	7,103	9.3	8.75	2.9	2.75
Lanark:										
Bathurst	61,691	2,052	1,299,851	11,435	11,683	730	8.8	5.57	.6	36
Beckwith	56,424	1,338	518,180	8,544	8,527	1,333	16.5	6.39	2.4	1.00
Burgess, N.	33,485	709	434,963	3,588	3,249	442	8.2	5.06	1.0	62
Dalhousie & Sherbrooke, N.	70,034	1,450	457,217	6,719	6,747	721	14.7	4.63	1.6	50
Darling	41,832	573	107,030	1,911	1,757	306	17.9	3.34	2.9	53
Drummond	55,818	1,696	1,149,645	12,516	12,344	1,063	10.9	7.38	.9	63
Elmsley, N.	28,308	788	636,675	5,921	5,868	428	9.3	7.51	.7	54
Lanark	61,270	1,508	845,644	7,987	8,167	526	9.4	5.30	.5	35
Lavant	43,350	435	79,547	1,948	2,262	811	24.5	4.48	10.2	1.86
Montague	62,322	1,820	609,281	11,283	10,540	1,255	18.5	5.20	2.1	.69
Pakenham	57,358	1,390	634,073	10,717	10,723	1,723	16.9	7.71	2.7	1.24
Ramsay	60,976	1,792	1,392,398	12,158	11,875	1,276	8.7	6.78	.9	71
Sherbrooke, S.	37,167	679	117,667	2,206	2,179	168	18.7	3.25	1.4	25
Leeds:										
Bastard & Burgess, S.	56,626	2,438	1,750,261	17,174	17,267	1,162	9.8	7.04	.7	48
Crosby, N.	42,898	950	335,257	6,514	7,159	354	19.4	6.86	1.1	37
Crosby, S. (1909)	36,321	1,415	760,180	9,252	9,417	741	12.2	6.54	1.0	52
Elizabethtown	77,033	3,432	1,406,350	23,344	23,232	4,606	12.6	6.80	3.3	1.34
Elmsley, S.	22,467	704	451,148	4,994	4,973	203	11.1	7.09	.5	29
Escott, Front.	24,141	930	431,586	7,249	6,816	2,194	16.8	7.79	5.1	2.36
Kitley	49,188	1,610	1,007,040	11,558	11,615	1,130	11.5	7.18	.7	45
Leeds & Lansdowne, Front.	57,909	2,688	1,967,908	21,458	21,411	6,355	10.9	7.98	3.2	2.36
Leeds & Lansdowne, Rear	45,365	2,205	1,414,960	14,853	14,426	5,507	10.5	6.74	3.9	2.50
Yonge, Front.	31,100	1,394	494,600	9,912	9,918	2,743	20.0	7.11	5.5	1.97
Yonge & Escott, Rear	27,534	1,104	412,615	8,893	8,665	1,322	21.6	8.06	3.2	1.20
Lennox & Addington:										
Adolphustown	11,597	521	326,663	4,480	4,310	546	13.7	8.60	1.7	1.05
Amherst Island	14,660	713	355,610	4,553	4,469	732	12.8	6.39	2.1	1.03
Camden, E.	86,402	3,354	1,731,261	27,300	25,818	3,326	15.8	8.14	1.9	.99
Denbigh, Abinger and Ashby	46,784	868	60,366	1,896	1,872	215	31.4	2.18	3.6	25
Ernesttown	61,797	2,867	1,477,075	22,124	24,599	4,017	15.0	7.72	2.7	1.40

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1910—Continued.

Township Municipality	Assessed area in acres	Assessed population, 1910	Total values assessed, 1910	Total municipal and school taxes 1910		Total expend- iture on roads and bridges, 1910	Mills on \$	Total tax imposed per head	Mill rate for roads and bridges	Roads and bridges ex- penditure per head
				Imposed	Received					
Fredericksburg, N.....	23,434	1,401	719,045	8,834	9,954	1,010	12.3	\$ c. 6 31	1.4	\$ 72
Fredericksburg, S.....	20,588	950	713,825	8,253	19,272	504	11.6	8 69	.7	53
Kaladar & Anglesea.....	60,610	1,070	123,196	3,338	3,436	434	27.1	3 12	3.5	41
Richmond.....	50,085	1,970	992,365	14,269	14,433	1,336	14.4	7 24	1.3	68
Sheffield.....	71,161	1,692	755,475	9,004	9,081	446	11.9	5 32	5.9	26
Lincoln:										
Caistor.....	32,655	1,379	724,313	9,107	9,354	1,506	12.6	6 60	2.1	1 09
Clinton.....	24,334	2,052	1,469,413	19,996	20,144	5,553	13.6	9 74	3.8	2 70
Gainsborough.....	39,795	2,064	1,206,698	13,176	10,838	4,298	10.9	6 38	3.6	2 08
Grantham.....	19,116	2,193	1,336,590	14,476	14,456	1,600	10.8	6 60	1.2	73
Grimsby, N.....	15,654	1,505	1,161,001	14,981	13,605	3,771	12.9	9 95	3.2	2 51
Grimsby, S.....	18,114	1,222	691,850	9,246	9,224	1,736	13.4	7 57	2.5	1 42
Louth.....	18,765	1,860	1,027,304	14,277	13,901	3,456	13.9	7 68	3.4	1 86
Niagara.....	22,111	1,674	1,269,835	14,973	15,566	6,441	11.8	8 93	5.1	3 85
Middlesex:										
Adelaide.....	44,157	1,699	2,002,770	16,978	16,970	1,652	8.5	9 99	.8	97
Biddulph.....	39,233	2,005	1,863,490	14,922	15,071	2,535	8.0	7 44	1.4	1 26
Caradoc.....	62,146	3,120	2,421,445	26,827	25,649	3,632	11.1	8 60	1.5	1 16
Delaware.....	23,718	1,314	925,020	11,544	15,228	2,557	12.5	8 79	2.8	1 95
Dorchester, N.....	51,634	3,205	2,565,006	26,020	27,702	4,156	10.1	8 12	1.6	1 30
Ekfrid.....	53,429	2,329	2,233,100	22,173	23,275	5,472	9.9	9 52	2.5	2 35
Lobo.....	47,263	1,998	2,240,526	22,277	23,769	4,666	9.9	11 15	2.1	2 34
London.....	99,297	8,743	5,997,047	64,298	56,141	18,262	10.7	7 35	3.0	2 09
McGillivray.....	66,610	2,390	2,594,210	23,163	23,231	4,340	8.9	9 69	1.7	1 82
Metcalfe.....	36,200	1,300	1,330,855	15,046	14,690	2,598	11.3	11 57	2.0	1 91
Mosa.....	47,248	1,873	1,519,337	16,727	17,102	2,157	11.0	8 93	1.4	1 15
Nissouri, W.....	49,431	2,510	2,647,870	26,868	27,718	5,032	10.1	10 70	1.1	2 00
Westminster.....	63,526	4,744	3,979,085	39,538	40,705	10,069	9.9	8 33	2.5	2 12
Williams, E.....	38,606	1,285	1,329,155	14,929	14,956	3,806	11.2	11 62	2.9	2 96
Williams, W.....	35,242	1,230	1,153,751	10,988	10,907	1,997	9.5	8 93	1.7	1 62
Norfolk:										
Charlottetown.....	59,752	2,875	1,281,755	14,026	14,346	2,313	10.9	4 88	1.8	80
Houghton.....	33,574	1,847	506,200	10,452	10,396	1,863	20.6	5 66	3.7	1 09
Middleton.....	44,630	2,306	982,810	14,322	14,961	2,396	14.6	6 21	2.4	1 04

Townsend.....	64,683	3,490	2,671,806	21,434	22,154	3,095	8.0	6.25	1.2	90
Walsingham, N.....	40,107	1,773	726,015	11,816	13,282	2,262	16.3	6.66	3.1	1 28
Walsingham, S.....	52,586	1,606	859,010	11,406	11,168	2,262	13.3	7.10	1.8	97
Windham.....	66,930	3,152	1,737,179	16,994	17,893	2,236	9.8	5.39	1.3	71
Woodhouse.....	34,777	2,067	1,594,588	12,960	12,923	3,643	8.1	6.27	2.3	1 76
Northumberland:										
Alnwick.....	18,123	817	447,410	4,825	4,783	847	10.8	5.91	1.9	1 04
Brighton.....	48,431	2,206	1,223,204	13,459	13,190	2,313	11.0	6.10	1.9	1 05
Cramahe.....	46,939	2,232	1,123,255	16,759	16,064	5,302	14.9	7.51	4.7	2 38
Hamilton.....	76,195	3,406	1,541,195	20,266	19,433	5,952	13.1	5.95	2.6	1 18
Hamilton.....	62,467	3,462	2,114,255	19,722	19,302	5,833	9.3	5.70	2.8	1 68
Monaghan, S.....	18,195	884	668,435	5,460	5,277	1,045	8.2	6.18	1.6	1 18
Murray.....	47,943	2,643	1,189,450	14,617	14,547	1,648	12.3	5.53	1.4	62
Percy.....	51,414	2,621	1,002,942	14,654	14,684	3,640	14.6	5.59	3.6	1 39
Seymour.....	67,000	2,601	1,147,256	17,800	15,918	4,075	15.5	6.84	3.6	1 57
Ontario:										
Brook.....	66,331	3,213	2,740,084	21,545	21,588	5,322	7.9	6.71	1.9	1 66
Marathon.....	61,305	2,754	1,642,102	16,387	16,437	7,157	10.0	5.95	4.4	2 59
Pickering.....	71,802	4,721	3,345,299	31,027	30,198	9,520	9.3	6.57	2.8	2 02
Rama.....	35,841	1,065	236,208	4,770	5,202	451	20.2	4.48	1.9	42
Reach.....	63,558	2,981	2,050,327	18,335	18,280	2,463	8.9	6.15	1.7	1 16
Scott.....	49,316	1,814	1,383,858	13,662	13,561	2,881	9.9	7.53	2.1	1 59
Seungog.....	9,597	416	285,040	2,936	3,028	339	10.3	7.06	1.2	81
Thorah.....	32,200	1,132	1,160,332	8,861	8,670	1,717	7.6	7.43	1.5	1 41
Uxbridge.....	51,930	2,299	986,231	11,824	11,555	1,761	12.0	5.14	1.8	77
Whitby, E.....	32,025	2,644	1,702,815	16,488	17,055	6,374	9.7	6.24	3.7	2 41
Whitby.....	30,531	1,781	1,509,044	16,288	16,281	6,563	10.8	9.15	4.3	3 69
Oxford:										
Blandford.....	29,656	1,410	1,271,965	13,991	13,745	2,185	11.0	9.92	1.7	1 55
Blenheim.....	66,906	4,034	3,162,234	34,003	34,719	10,183	10.9	8.58	3.2	2 52
Dereham.....	64,927	3,597	3,269,105	40,853	43,214	8,545	12.5	11.36	2.6	2 38
Nissouri, E.....	46,532	2,419	2,768,736	23,050	23,289	5,307	8.3	9.53	1.9	2 19
Norwich, N.....	33,893	2,166	1,703,000	23,682	22,438	7,829	13.9	10.93	4.6	3 61
Norwich, S.....	36,730	2,105	1,151,007	16,269	16,423	4,611	14.1	7.73	4.0	2 19
Oxford, E.....	34,673	1,864	1,561,500	21,508	20,539	5,794	13.8	11.54	3.7	3 11
Oxford, N.....	21,075	1,104	1,122,742	9,634	9,637	2,057	8.6	8.73	1.8	1 86
Oxford, W.....	25,855	1,832	1,442,272	14,936	16,261	2,909	10.4	8.15	2.0	1 59
Zorra, E.....	57,075	3,282	3,820,466	31,910	31,841	10,882	8.4	9.72	2.8	3 32
Zorra, W.....	55,041	2,458	2,910,331	29,095	28,473	4,857	10.0	11.84	1.7	1 98
Peel:										
Albion.....	56,220	2,300	1,570,936	15,990	16,000	3,537	10.2	6.95	2.3	1 54
Caledon.....	68,567	3,447	1,810,385	23,187	24,316	6,805	12.8	6.73	3.8	1 97
Chingacousy.....	80,024	3,282	3,972,200	30,628	29,537	5,627	7.7	9.33	1.4	1 71
Toronto.....	64,857	5,313	3,349,115	37,751	37,782	13,876	11.3	7.11	4.1	2 61
Toronto Gore.....	19,009	827	798,980	8,099	8,061	2,950	10.1	9.79	3.7	3 57

Hallowell.....	43,708	2,418	1,124,893	16,104	16,223	1,211	14.3	6.66	1.1	50
Hillier.....	31,890	1,451	871,030	10,594	10,107	1,231	12.2	7.30	1.4	85
Marysburg, N.....	23,627	1,012	486,800	7,148	6,182	1,049	14.7	7.06	2.2	1 04
Marysburg, S.....	24,490	1,028	536,460	5,864	5,657	265	10.9	5.70	.5	26
Sophasburg.....	43,100	1,903	1,010,850	11,755	11,914	423	11.6	6.18	.4	22
Renfrew:										
Admaston, S.....	72,305	1,874	783,095	7,360	7,626	807	9.4	3.93	1.0	43
Algona, S.....	30,542	701	108,100	1,795	2,093	15	16.6	2.56	.1	02
Alice & Fraser.....	58,295	1,967	573,500	5,947	6,079	248	10.4	3.02	.4	13
Bagot & Blythfield.....	61,640	1,160	152,283	3,888	3,593	393	25.5	3.35	2.6	34
Bromley.....	49,685	1,773	1,304,358	11,872	14,650	831	9.1	6.70	.6	47
Brougham.....	28,457	489	77,265	1,192	1,439	33	15.4	2.44	.4	07
Brudenell & Lyndoch.....	64,522	1,242	188,035	2,860	3,099	307	15.2	2.30	1.6	25
Grattan.....	63,725	1,877	294,260	4,391	4,445	236	14.9	2.34	.8	13
Griffith & Matawatchan.....	26,589	592	55,921	1,000	1,075	49	17.9	1.69	.9	08
Hagarty & Richards.....	60,417	2,206	370,860	5,862	6,608	555	15.8	2.66	1.5	25
Head, Clara & Maria.....	16,085	348	64,154	1,807	998		28.2	5.19		
Horton.....	38,314	1,361	533,378	5,602	5,400	313	10.5	4.12	.6	23
McNab.....	62,705	3,443	1,178,190	16,047	16,412	1,380	13.6	4.66	1.2	40
Pembroke.....	8,310	1,074	317,509	2,933	2,457	98	9.2	2.73	.3	09
Petewawa & McKay.....	19,656	807	72,173	1,350	1,240	250	18.7	1.67	3.5	31
Radcliffe.....	22,622	362	46,815	1,338	957	120	28.6	3.70	2.6	33
Raglan.....	35,485	728	59,175	3,018	2,182	99	51.0	4.15	1.7	14
Rolph.....	34,128	913	166,860	2,924	2,068	100	17.5	3.20	.6	11
Ross.....	52,149	1,859	889,375	11,471	11,804	2,972	12.9	6.17	3.4	1 60
Sebastopol.....	33,074	595	57,643	1,403	1,395	178	24.3	2.36	3.1	30
Sherwood, Jones & Burns.....	46,446	1,363	182,590	3,181	2,694	167	17.4	2.33	.9	12
Stafford.....	21,324	1,061	698,406	4,332	4,683	719	6.2	4.08	1.0	68
Westmeath.....	69,841	2,893	1,741,084	16,965	20,506	3,264	9.7	5.86	1.9	1 13
Wilberforce & Algona.....	72,160	2,226	546,978	7,331	7,366	773	13.4	3.29	1.4	35
Russell:										
Cambridge.....	59,012	3,231	1,049,936	18,589	16,425	3,136	17.7	5.75	3.0	97
Clarence.....	70,706	4,628	1,134,308	21,601	19,464	2,735	19.0	4.67	2.4	59
Cumberland.....	74,223	3,798	1,692,533	27,720	34,355	10,931	16.4	7.30	6.5	2 88
Russell.....	46,614	3,410	1,575,260	26,578	26,099	2,843	16.9	7.79	1.8	83
Simcoe:										
Adjala.....	46,208	2,160	1,645,075	16,191	14,712	2,886	9.8	7.50	1.8	1 34
Essa.....	67,000	2,937	1,934,612	23,994	23,156	8,836	12.4	8.17	4.6	3 01
Flos.....	63,650	3,037	2,015,519	24,837	25,561	3,498	12.3	8.18	1.7	1 15
Gwillimbury, W.....	46,840	2,114	1,952,360	14,774	14,379	1,398	7.6	6.99	.7	66
Innisfil.....	68,828	3,148	2,440,208	21,542	21,537	2,997	8.8	6.84	1.2	95
Matchedash.....	33,642	429	115,491	2,237	2,122	1,390	19.4	5.21	12.0	3 21
Medonte.....	66,167	3,837	1,196,980	16,978	17,327	2,466	14.2	4.42	2.1	64
Nottawasaga.....	90,077	4,445	2,585,739	29,576	29,918	4,081	11.4	6.65	1.6	92
Orillia.....	77,555	3,220	644,507	18,451	19,444	4,620	28.6	5.73	7.2	1 43

ONTARIO (ORGANIZED) TOWNSHIP STATISTICS FOR 1910—Continued.

Township Municipality	Assessed area in acres	Assessed population, 1910	Total values assessed, 1910 \$	Total municipal and school taxes 1910		Total expend- ture on roads and bridges, 1910 \$	Mills on \$	Total tax imposed per head	Mill rate for roads and bridges expenditure per head	Roads and bridges ex- penditure per head \$ c.
				Imposed \$	Received \$					
Oro.....	73,240	3,322	1,581,828	18,345	18,521	1,265	11.6	5 52	.8	38
Sunnidale.....	58,110	2,299	963,966	15,369	15,335	3,627	15.9	5 58	3.8	1 58
Tay.....	46,841	5,907	2,222,950	25,509	31,219	3,003	11.5	4 32	1.4	51
Tecumseth.....	66,102	2,703	3,396,350	24,012	24,039	11,244	7.1	8 88	3.3	4 16
Tiny.....	79,086	3,508	1,318,968	19,572	19,080	2,934	14.8	5 58	2.2	84
Tossononto.....	44,497	1,489	752,083	8,027	8,024	680	10.7	5 39	.9	46
Vespra.....	63,210	2,297	1,395,349	14,455	14,611	2,001	10.4	6 29	1.4	87
Stormont:										
Cornwall.....	63,631	5,604	1,277,296	38,018	36,149	8,801	29.8	6 78	7.2	1 57
Finch.....	49,280	2,795	1,137,211	24,903	26,493	2,790	21.9	8 91	2.5	1 00
Osnabrock.....	62,040	4,597	2,029,350	31,740	31,873	2,489	15.6	6 90	1.2	54
Roxborough.....	71,270	3,634	1,656,443	38,000	37,583	3,564	22.9	10 46	2.2	98
Victoria:										
Bexley.....	28,432	660	237,864	4,136	3,690	624	17.4	6 27	2.6	95
Carden.....	44,525	654	226,335	3,795	3,680	432	16.8	5 80	1.9	66
Dalton.....	29,849	464	110,725	2,241	2,346	178	20.2	4 83	1.6	38
Eldon.....	60,032	2,396	1,524,954	17,447	18,645	3,092	11.4	7 28	2.0	1 29
Emily.....	59,726	1,854	1,042,591	13,722	13,719	2,311	8.4	7 40	1.4	1 25
Fenelon.....	51,466	2,023	1,116,565	13,055	16,155	1,887	11.7	6 45	1.7	93
Laxton, Digby & Longford.....	73,978	622	174,417	3,795	3,212	742	21.8	6 14	4.3	1 19
Mariposa.....	75,064	3,321	3,437,968	30,349	30,283	5,937	8.8	9 14	1.7	1 79
Ops.....	56,503	1,971	2,127,960	20,546	19,678	4,245	9.7	10 42	2.0	2 15
Somersville.....	64,262	1,636	254,080	7,590	7,341	1,521	29.9	4 64	6.0	2 93
Verulam.....	55,341	1,896	908,954	12,913	12,932	2,287	14.2	6 81	2.5	1 21
Waterloo:										
Dumfries, N.....	44,445	1,909	2,089,567	16,109	15,478	5,271	7.7	8 44	2.5	2 76
Waterloo.....	81,820	6,715	4,045,845	39,803	40,061	9,164	9.8	5 93	2.3	1 36
Wellesley.....	65,809	4,330	3,769,100	29,014	33,392	10,897	7.7	6 71	2.9	2 52
Wilnot.....	60,902	4,469	2,943,295	26,644	28,653	6,908	9.7	6 41	2.3	1 55
Woolwich.....	53,567	3,894	2,815,605	26,300	26,565	5,349	9.3	6 75	1.9	1 37
Welland:										
Bertie.....	35,095	3,132	2,028,880	28,132	26,656	12,305	13.9	8 98	6.1	3 93
Crowland.....	19,118	1,053	806,083	7,871	7,679	1,871	9.8	7 47	2.3	1 78
Humberstone.....	30,836	2,960	1,185,770	14,426	14,910	1,361	12.2	4 87	1.1	46
Pelham.....	28,727	2,513	1,150,080	15,884	15,420	4,118	13.8	6 32	3.6	1 64

Stamford.....	21,491	2,789	1,554,955	22,368	23,220	7,655	14.4	8 02	4.9	2 74
Thorold.....	22,650	1,703	781,434	14,639	12,194	2,887	18.7	8 60	3.7	1 70
Wainfleet.....	50,635	2,550	1,142,033	16,051	15,823	1,916	14.1	6 29	1.7	1 75
Willoughby.....	18,779	846	557,370	5,400	6,376	831	9.7	6 38	1.5	98
Wellington:										
Arthur.....	64,466	2,425	2,443,117	21,450	20,067	6,260	8.8	8 85	2.6	2 58
Eramosa.....	44,461	2,358	2,087,555	16,379	16,071	3,500	7.8	6 95	1.7	1 48
Erin.....	70,592	3,011	2,118,055	19,185	18,289	2,890	9.1	6 37	1.4	1 96
Garafraxa, W.....	47,084	1,815	1,708,767	16,722	17,019	4,174	9.8	9 21	2.4	2 30
Guelph.....	37,335	2,225	1,992,055	17,732	17,298	5,379	8.9	7 97	2.7	2 42
Luther, W.....	49,783	1,849	1,509,582	15,122	15,188	2,571	10.0	8 18	1.7	2 39
Maryborough.....	56,470	2,637	2,404,715	22,679	23,188	3,137	9.4	8 60	1.3	1 19
Minto.....	69,272	2,574	2,440,946	21,254	21,606	4,474	9.7	8 26	1.8	1 35
Nichol.....	27,167	1,528	1,308,880	10,101	9,789	1,063	7.7	6 61	.8	1 70
Peel.....	74,566	3,327	2,875,400	26,279	26,368	3,468	9.1	7 90	1.2	1 04
Pikington.....	29,143	1,149	1,322,491	10,715	10,875	2,123	8.1	9 33	1.6	1 85
Puslinch.....	58,339	2,609	1,475,122	16,680	16,862	2,857	11.3	6 39	1.9	1 10
Wentworth:										
Ancaster.....	48,105	3,830	2,409,125	24,606	24,116	5,479	10.2	6 42	2.3	1 43
Barton.....	10,799	3,644	953,836	17,925	18,329	15,595	18.8	4 92	16.3	4 28
Beverly.....	69,738	3,200	2,785,176	25,073	29,146	3,227	9.0	7 84	1.2	1 01
Binbrook.....	26,444	1,126	1,016,148	10,795	10,973	1,472	10.6	9 59	1.4	1 31
Flamborough, E.....	33,762	2,335	1,862,478	18,625	17,188	4,215	10.0	7 98	2.3	1 81
Flamborough, W.....	31,107	2,566	1,681,940	16,263	16,454	2,488	9.7	6 34	1.5	97
Glanford.....	23,539	1,408	1,086,096	9,694	8,020	1,037	8.9	6 88	1.0	74
Salfleet.....	28,304	3,176	2,053,586	29,267	28,847	7,681	14.4	9 22	3.8	2 42
York:										
Etobicoke.....	28,789	5,466	2,548,942	45,116	41,721	21,746	17.7	8 25	8.5	3 98
Georgina.....	35,105	1,491	915,922	8,113	8,111	1,733	8.9	5 44	1.9	1 16
Gwillimbury, E.....	57,942	3,251	1,667,300	21,865	21,658	3,038	13.1	5 44	1.8	93
Gwillimbury, N.....	31,476	1,499	1,013,000	8,270	8,287	1,106	8.2	5 52	1.1	74
King.....	88,787	4,636	3,569,915	31,114	32,440	6,344	8.7	6 71	1.8	1 37
Markham.....	67,219	5,054	4,146,399	40,028	38,943	13,301	9.7	7 92	3.2	2 63
Scarborough.....	42,547	3,426	2,600,151	31,129	31,091	13,232	12.0	9 09	5.1	3 86
Vaughan.....	67,037	3,957	3,608,070	33,531	37,448	12,677	9.3	8 47	3.5	3 18
Whitchurch.....	60,518	3,060	1,822,297	17,833	18,205	2,627	9.8	5 83	1.4	86
York.....	54,725	11,561	6,781,028	102,082	106,827	53,941	15.1	8 83	8.0	4 67

INDEX

A

	PAGE
Acknowledgments	27, 114, 187, 222
Acreage (yield per). <i>See</i> FARM PRODUCE.	
Acreage (total) cleared and under crop, 1904-1913 (fig.).....	41
Acreage (total) of farm produce, 1904-1913 (fig.).....	42-46
Acreage (total) necessary to satisfy local demand and surplus thereover (fig.)	47, 48
Acreage of urban municipalities	223-227
Addington— <i>See</i> Lennox and Addington.	
Administration of highway service under close direction of Minister.....	20
ADVISORY COMMISSION to assist Minister in matters of technical highway policy, to interest public, prosecute investigations, deal with remaining toll roads, mediate between conflicting interests in fixing of suburban areas and to consult with senior officers of the administration.....	7, 10, 13, 19, 20, 27
Advisory Commission, proposed appointment for five years, of three men with requisites	18
Advisory Commission in the United States.....	19
AGRICULTURAL Co-operation in Europe, needed in Canada.....	38
Agricultural Development of Ontario, inquiries of Commission concerning....	10
Agricultural Development of territory to be shown by Traffic Census.....	24
AGRICULTURAL INTERESTS (<i>Appendix</i>)	33-36
Agricultural Needs of Province to be considered before tourist requirements...	23
Agricultural Production doubled by employment of best methods; good roads Indispensable preliminary to increase of	34
Agricultural Production, increase within suburban belt of.....	36
AGRICULTURE, Ontario's capital investment in; annual production of.....	34
Agriculture, bonusing by cities of.....	36
<i>See also</i> PRODUCTION, FARMING, etc.	
Aid— <i>See</i> PROVINCIAL, FEDERAL AID.	
Alabama, Highway Organization in	152
American <i>vs.</i> British administrative systems	19, 20
American Academy of Political and Social Science, article in annals of.....	37
American make of motors in Ontario	100, 101
<i>See also</i> United States.	
ANALYSIS OF AUTOMOBILE REGISTRATION IN ONTARIO, 1913 (<i>Appendix</i>).....	100-107
APPENDICES, results of inquiries contained in	11, 33-263
Appointment of Public Roads and Highways Commission.....	7
Appointment of Advisory Commission	7, 20
Appointment of District or County assessors	26
Apportionment of cost, classification of highways necessary for	11
Arbitration <i>re</i> toll roads in Carleton County.....	13
AREA, apportionment of aid to townships on basis of	15
Areas of Ontario and New York State	9
Areas of Ontario, England and Wales	11
Areas required for support of centres of population	11
(<i>See also</i> SUPPORTING AREA.)	
Areas (Suburban). <i>See</i> SUBURBAN AREAS.	
Areas of production increased by good roads.....	37
Areas of Counties, a factor in classification of roads.....	24
Areas (Assessed) of townships	228-263
Arthur township, resolution of	62
Assessed area and population of townships	228-263
ASSESSMENT of townships, 1912	14
Assessment, apportionment of aid to townships on basis of.....	15
Assessment, examination into ratio of selling price to; need of uniformity in	26, 209-214
Assessment, to be thoroughly made every five years.....	26
Assessment, evidence given concerning	74

	PAGE
ASSESSMENT IN ONTARIO, MEMORANDUM ON (<i>Appendix</i>).....	208-216
Assessment, summary of statutes concerning land	208
Assessment roll, annual correction of; relation of good roads to.....	26
Assessors, annual appointment of; district or county.....	26
Assessors, number in each township, 1913.....	188-199
Association of Ontario Municipalities, representations as to assessment methods made by	26
Athens Road, traffic census on	93
Automobile— <i>See</i> MOTOR.	

B

Barrie-Orillia Road, traffic census on	88
Bay of Quinte bridge, Government maintenance asked for.....	75
Belgian make of motors in Ontario	100, 101
Belgium, industrial workers living outside towns of.....	22
Belleville bridge, Government maintenance asked for.....	75
Belleville, opinions expressed at hearing of commission at.....	36
Belleville Board of Trade	36
Belleville, summary of evidence given at hearing of commission at.....	72-75
Berlin, summary of evidence given at hearing of commission at.....	72-75
Boards of Trustees— <i>See</i> TRUSTEES (BOARDS OF).	
Boards of Trade— <i>See</i> TRADE (BOARDS OF).	
BONDS necessary for future highway revenue; to be used only for permanent roads; redeemable twenty to thirty years; designed to reach in 1930 a grand total of \$30,000,000	9, 17, 26
Bonusing by cities of agriculture and other industries.....	36
Brant County, (joint) resolution of	61
Brant County, toll roads remaining in	221
Brantford-Hamilton road, traffic census on	90
BRIDGES, treatment of townships with exceptional number of.....	18
Bridges, resolution of Victoria County concerning.....	58
Bridges, evidence given concerning	74
Bridges, Government maintenance asked for certain	75
Bridge Expenditure— <i>See</i> EXPENDITURE ON ROADS AND BRIDGES.	
British <i>vs.</i> American administrative systems	19, 20
British investors in Canada	33
British make of motors in Ontario	100, 101
British Columbia, Highway Organization in	116
Bronte, resolution of village of	65
Bruce County, resolution of	51
Buildings not to be erected in track of diagonal roads.....	13
Burlington, resolution of village of	65
Business men and firms, number of motors in Ontario owned by.....	102
By-laws (money), <i>See</i> Money by-laws.	

C

California, Highway Organization in; (and fig.)	146-152
Canada, rural mail delivery revenue and mileage in	111
Canada, Farming, mining and lumbering interests, railway development in..	33
Canada (other provinces of) Highway Organization in	114-117
Canada (other provinces of), motor licenses issued (1913) to residents of ...	104
Canadian make of motors in Ontario	100, 101
Capacity (seating) of Ontario motors	100
Capacity (seating) of tourist motors in Ontario	103
Capital to be obtained immediately for permanent highways; future expenditure.	9, 17
Capital of farmer <i>vs</i> that of city	34
Caradoc Indian Reserve, resolution of council of	67
Carleton County, toll roads remaining in	13, 221
Carleton County, increase of land values in	200, 201
Cartage, <i>See</i> DISTRIBUTION.	
Census (traffic) <i>See</i> TRAFFIC CENSUS.	
Central Government, function of	16, 21
Centres of Population, <i>See</i> CITIES.	
Centres of Trade, <i>See</i> TRADING CENTRES.	
Chauffeurs' Licenses, tax for registration of	24

	PAGE
Chief Engineer. <i>See</i> ENGINEER (CHIEF).	
CITY, interested in cheaper methods of distribution of farm produce; equilibrium to be maintained between rural communities and	38, 40
CITY AND ROADS, THE (<i>Appendix</i>)	37-40
City, checking movement from farm to	34
CITIES, wear on suburban roads due largely to residents of	23
Cities, determination of suburban areas about (1914)	10, 27, 108
<i>See also</i> SUPPORTING AREAS OF ONTARIO CITIES.	
Cities, to co-operate with country districts; as principal beneficiary of roads in suburban area; relations with farming interests ..7, 9-12, 22, 23, 26, 34-36	
Cities, contributors to permanent highway system in New York State.....	24
Cities, number of motors owned in	102
CITIES AND TOWNS IN ORDER OF DENSITY OF POPULATION (<i>Appendix</i>)	223-227
Cities and towns separated from county (contribution from), resolutions in favor of	52, 59, 63, 65, 68, 70
Cities (contribution from) for support of suburban roads; maximum rate therefor; capital bond issue 1915-1930	17, 26
CLASSIFICATION OF ROADS, principles of; proposed plan of.....	12, 17, 24
Classification of roads (memorandum and diagram)	27, 28
Classification of roads, resolutions concerning	52, 62, 69, 71
COLONIZATION ROADS, to remain in charge of present organization	11
Colorado, Highway Organization in	153, 154
Coleman (Professor)	222
Commercial truck— <i>See</i> MOTOR.	
Commission, <i>See</i> ADVISORY COMMISSION.	
PUBLIC ROADS AND HIGHWAYS COMMISSION.	
MUNICIPAL CONTROL.	
Commission (permanent county)	14, 26
Commodities, cost of foods compared with others (chart)	220
Community, good roads part of equipment supplied farmer by	34
Commutation, <i>See</i> STATUTE LABOUR.	
Competition, among counties	21
Connecticut, Highway Organization in	154, 155
CONSTRUCTION methods and costs, in connection with classification of highways and traffic needs	9, 11
Construction (types of road), resolutions concerning	54, 56, 57, 68
Construction (types of road), evidence given concerning	72
Consumer, relation between producer and	12, 26, 35, 37, 38
Control of roads according to classification	12, 17, 21, 26
<i>See also</i> MUNICIPAL CONTROL.	
Cooperation, of cities with country districts	7
Cooperative marketing by farmers; use of the motor	38
<i>See also</i> AGRICULTURAL CO-OPERATION.	
Co-operation between Provincial governments and municipalities, resolution in favour of	70
Co-operation of central government in Great Britain, France, Germany and the United States; advocated for Ontario	16, 21
Corporations, question as to taxation of	25
Cost, <i>See</i> CONSTRUCTION, MAINTENANCE, LIVING, (HIGH COST OF).	
Cost-keeping necessary, proper system of	17
Councillors (tenure of office by) <i>See</i> MUNICIPAL ELECTIONS.	
Councils— <i>See</i> COUNTY, TOWNSHIP.	
COUNTIES, present and proposed contribution from; competition among	9, 14, 21, 23, 29
Counties, mileage of steam and electric railways according to.....	77-86
Counties, rural mail delivery revenue and mileage in Ontario according to.....	112, 113
<i>See also</i> HIGHWAY IMPROVEMENT ACT.	
County districts. <i>See</i> RURAL COMMUNITIES.	
County Councils, inclusion of toll roads in County Councils by; control of county rural roads	13, 14, 26
COUNTY ROADS, (MARKET ROADS) importance, function and cost of. 8, 12, 13, 27, 28, 29	
County road system (present), mileage according to townships of roads under	77-86
County road system (proposed), assistance to main township roads to depend upon assumption by county of	15
County rural roads. <i>See</i> RURAL MARKET ROADS.	
Crops— <i>See</i> FARM PRODUCE.	

D

Dakota (North) <i>See</i> North Dakota.	
Darlington Township, (joint) resolution of	64
Debentures, diversion from permanent road construction punishable by law	18
Decreases in population of Ontario (1901-1911)	11
Delaware, Highway Organization in	155
Delivery wagons, <i>See</i> Motors.	
Density of population, <i>See</i> POPULATION.	
DEPUTY MINISTER for Highways Department	19, 27
Development of Ontario (future), a factor in classification of roads	24
<i>See also</i> CITIES, Social Development.	
Diagonal roads to connect certain centres	12
DISTRIBUTION of farm products, investigation of cost of	37, 38
District assessors recommended	26
Doctors, <i>See</i> Medical Men.	
Dominion Geological Survey, investigation of road building material by	10, 222
Dominion Government, <i>See</i> FEDERAL AID.	
Doughty (Dr. A. G.)	187
Dragging of township roads, a condition of provincial aid	15
Drainage of township roads, a condition of provincial aid	15
Dundas Street, Government maintenance asked for	74
Dundas Street, traffic census on	89
Durham, <i>See</i> Northumberland and Durham.	

E

Earth roads, resolution concerning	56
Earth roads, mileage of well-graded (total and according to township)	76-86
Economic benefits of good roads to farmers	34, 35
Educational value of well-organized township road system	16
Electricity, number of Ontario motors given by	102
Electric Railway— <i>See</i> RAILWAYS.	
Elgin County, resolution of	52
Elgin County, ratio of assessment figures to sale figures in	209
Elliott (Judge), report of	210, 214-216
Elliott (Mr. J.), opinion of	36
Elmira-Galt Road, <i>See</i> Galt-Elmira Road.	
Employer of labour interested in cheaper methods of distribution of farm products	38
ENGINEER (CHIEF) for Highway Department	10, 19, 27
Engineers to study township roads	10
England, three years term of office for municipal councillors in	18
England and Wales compared with Ontario as to area and population	11
Equalization of assessment, Halton County	210, 214-216
Essex County, resolution of	53
Europe, agricultural co-operation in	38
EVIDENCE PRESENTED TO THE COMMISSION, SUMMARY OF (<i>Appendix</i>)	72-75
EXPENDITURE ON ROADS AND BRIDGES, total capital and annual for permanent work, with rate per head; administrative body for; local control of	9, 10, 17, 18, 26, 51
Expenditure on roads and bridges by townships, exclusive of statute labour commutation, 1913	188-199
Expenditure on roads and bridges by townships through direct municipal taxation, 1900, 1905, 1910	228-263

F

FARM, checking of movement to city from	34
FARMER, good roads not exclusively business of; profitable use of motor by; use of county road to trading centre by; widening of suburban area profitable to; interested in cheaper methods of transportation; co-operative marketing by	7, 8, 12, 22, 29, 37, 38
Farmer, development of Canada chiefly dependent on; most numerous single element in community with largest capital investment; increased use of motor by; case for good roads to rest chiefly upon economic benefits to; relation of city to	33-35
Farmers, number of motors owned in Ontario by	25, 102

	PAGE
Farming, good roads and improved	38
Farming interests in Canada	8, 22, 33
FARM PRODUCE, average value per acre of; increase within suburban area of; investigation <i>re</i> cost of distribution of	35-38
Farm produce, total acreage of, 1904-1913 (fig.)	42-46
FARM PRODUCTION, DATA FOR CHART OF (<i>Appendix</i>); average yield per acre (1882-1912)	217, 218
Farm Values— <i>See</i> LAND VALUES.	
<i>For above see also</i> AGRICULTURE, etc.	
FEDERAL AID, resolutions in favour of	51, 54, 55, 59, 61, 62, 65, 66, 68
Fergus-Guelph Road, <i>See</i> Guelph-Fergus Road.	
Finance, <i>See</i> EXPENDITURE, BONDS, TAXATION, ETC.	
Financial Proposals— <i>See</i> PROVINCIAL and FEDERAL AID, MAINTENANCE, FRONTAGE TAX, MOTOR TAX, RAILWAYS, LOANS, ETC.	
FINDINGS AND RECOMMENDATIONS OF THE COMMISSION	1-29
Food (cost of), bearing of suburban roads on	12
<i>See also</i> FARM PRODUCE.	
Foods (cost of), compared with other commodities in Canada, 1902-1912 (fig.) ..	220
Foreign tourists, trucks, etc., <i>See</i> MOTORS.	
Foreman for township highway work, permanent	15
France, rate per head of annual maintenance charge in; co-operation of central government in	9, 16
Fraser (Dr. Alexander)	187
Freight, transport by motor of; haulage by railways <i>vs.</i> water, by horse-drawn vehicles <i>vs.</i> motor	8, 37
Freight rates for delivery of road material, resolution in favour of cheaper ..	60, 64
French make of motors in Ontario	100, 101
FRONTAGE TAX, resolutions in favour of	62, 65, 68, 70
Frontage tax, resolutions against	54, 55
Frontenac County, increase of land values in	201
Frontenac County, ratio of sale values of assessment figures in	209, 210

G

Galt-Elmira road, Government assistance asked for	75
Gasoline, number of Ontario motors driven by	102
General policy, <i>See</i> HIGHWAY POLICY (GENERAL).	
Geological Survey of Canada	10, 222
Georgian Bay district, tourist traffic in	23
Germany, co-operation of central government in	16
GOOD ROADS, saving of time in marketing and extension of food supply area by; problem simplified by direct taxation; relation to the assessment roll ..	22, 24, 26
Good Roads in relation to farmer and rural communities	34, 35, 37, 38
Good Roads and farm values	200-207
Good Roads in relation to city	40, 108
Government assistance, <i>See</i> PROVINCIAL, FEDERAL AID.	
Gravel for road construction, resolution in favour of	54
Gravel roads, mileage of improved (total and according to townships)	77-86
Great Britain, co-operation of central government in	16
Great Britain, motor tax schedule applied to Ontario motors	25, 107
Grenville, <i>See</i> Leeds and Grenville.	
Guelph, summary of evidence given at hearing of Commission at	72-75
Guelph Board of Trade, resolution of	68
Guelph-Fergus road, traffic census on	92

H

Haldimand County, (joint) resolution of	61
Haldimand County, increase of land values in	201
Halton County, resolution of	53
Halton County, increase of land values in	202
Halton County, ratio of sale figures to assessment figures in; equalization of assessment in	210, 214-216
Hamilton, resolution and evidence presented at hearing of Commission at	61, 72-75
Hamilton, number of motors owned in	101, 102
Hamilton, estimated supporting area of	109, 110
Hamilton Automobile Club, resolution of	70
Hamilton Board of Trade, (joint) resolution of	68, 69

	PAGE
Hamilton-Brantford road, <i>See</i> Brantford-Hamilton road.	
Hamilton-Toronto road, <i>See</i> Toronto-Hamilton road.	
Hastings County, resolution of	53
Hastings County, increase of land values in	202
Haulage, prizes for best statement as to road	38
Hauling (cost of), impossible to contain concise estimate of; (fig.).....	38, 39
<i>See also</i> Marketing.	
Health, residents in country of city workers conducive to good.....	22
HEARINGS of the Commission.....	36, 50-71, 72-75
HIGHWAYS, preliminary investigations; inquiry as to traffic on.....	7, 10
Highways <i>vs.</i> railways	8
HIGHWAYS DEPARTMENT, proposed organization of.....	17, 18, 19, 21, 27
Highway Improvement, fair to appropriate motor tax to.....	24
HIGHWAY IMPROVEMENT ACT, resolutions in favour of amendments to	53, 55, 57, 59, 60
Highway Improvement Act (counties under) to continue work, 1914; regula- tions to be made temporarily elastic	27
Highway Improvement Act (counties not now under), investigation leading to plan of county roads for (1914).....	10, 27
Highway Organization (for Ontario), resolution concerning	66, 68
Highway Organization (for Ontario), evidence given concerning	73
HIGHWAY ORGANIZATION IN CANADA AND THE UNITED STATES (<i>Appendix</i>)	114-166
Highway policy recommended (1915-1930)	9, 26, 27
HIGHWAY POLICY (GENERAL) to be controlled by Legislature.....	7, 20
HIGHWAY POLICY (TECHNICAL) to be studied by Advisory Commission.....	7, 10, 20
HISTORICAL SKETCH OF ROAD DEVELOPMENT IN ONTARIO (<i>Appendix</i>).....	167-187
Holdings of land (small), by industrial workers	22
Horse-drawn vehicles, wear of road contributed by.....	25
Horse-drawn vehicles, haulage of freight by motor <i>vs.</i>	37
Horse-power, motor tax according to; Ontario motors according to; tourist motors according to	25, 100-102, 103
Huron Road, traffic census on	90

I.

Immediate proposals recommended	9, 10, 27
Improvement areas, resolutions in favour of	52, 56
Improved gravel and stone roads, mileage of (total and according to townships).....	76-86
Increases in population of Ontario (1901-1911).....	11
Indian Reserve, <i>See</i> Caradoc Indian Reserve.	
Industries prosecuted within suburban areas	22
Industries, Ontario's capital investment in	33
Innisville Road, traffic census on	92
INTERURBAN ROADS, suburban roads if within suburban areas; motor vehicles to contribute towards; tourist, local and non-local traffic on; use by farm- ers of; use and function of; special standard for	8, 11, 12, 14, 23, 24, 29
Interurban Roads, traffic census on (1913)	88-91
<i>See also</i> TRUNK ROADS.	
Inspection of permanent work during progress by Highways Department	18
Investigations proposed for 1914	10, 11, 12, 27
Investors, British	33
Italy, motor tax schedule applied to Ontario motors	25, 107
Iowa, Highway Organization in	155-157

K.

Kansas, Highway Organization in	157
King (Dr. Clyde Lyndon), opinion of	37, 38
Kingston Road, resolution by adjoining municipalities concerning	64
Kingston Road, government maintenance asked for	74
Kingston Road, traffic census on	89, 90

L.

PAGE

Labour (prison) See Prison Labour.	
Labour (statute), See STATUTE LABOUR.	
Lake Shore Road, See Toronto-Hamilton Road.	
Lambton County, toll roads remaining in	221
Lanark County, increase of land values in	202, 203
Land (productively of) to be considered in highway classification	12
Land, need of placing a larger proportion of the population on the	33
LAND VALUES AND ROAD DEVELOPMENT (<i>Appendix</i>); returns received from farmers	200, 207
Leeds and Grenville Counties, increase of land values in	203
Leeds and Grenville Counties, toll road remaining in	221
Legislature to remain in control of general highway policy	7
Lennox and Addington Counties, increase of land values in	203
License (motor)—See MOTOR TAX.	
Lincoln County (joint) resolution of	61
Lincoln County, increase of land values in	203
Lincoln County stone road, traffic census on	88
LIVING (HIGH COST OF) and good roads	38, 40
Loans from Province to municipalities, conditions of	15
Loans to municipalities, resolutions in favour of	56, 60
Local control of roads recommended	21
Local functions of Interurban Roads	23
Local Improvement Tax, for excess of standard cost of suburban roads	14, 29
London, summary of evidence given at hearing of commission at	72, 75
London, number of motors owned in	102
London, estimated supporting area of	109
London-St. Thomas Road, grant asked for	75
London-Tilsonburg Road, grant asked for	75
Longwoods Road, grant asked for	75
Longwoods Road, traffic census on	91
L'Original-Ottawa Road, See Ottawa-L'Orignal Road.	
Lumbering, as a Canadian industry; annual production in Ontario of	33, 34

M

Madoc Road, traffic census on	94
MAINTENANCE of permanent highways; cost in proportion to traffic; distribution of cost of; grouping under counties for purposes of; necessary from time of construction; funds to be derived from current revenues	9, 11, 14, 16, 17, 27
Maintenance, resolutions concerning	51-54, 57, 60-64, 66, 68, 70
Maintenance, evidence given concerning	72, 74, 75
Main-travelled roads, See INTERURBAN ROADS, SUBURBAN ROADS, RURAL MARKET ROADS, TRUNK ROADS, etc.	
Make, Ontario motors according to	100, 101
Manufacturers' Association, (joint) resolution of	68, 69
Manufactures, Ontario capital investment in	33
Maps, highway and agricultural information contained in	11
Marketing facilitated by good roads; by co-operation	7, 34, 37, 38, 108
MARKET ROADS, resolutions concerning	54, 55, 59, 62
Market roads, evidence given concerning	72, 75
See also COUNTY ROADS.	
Market (Rural) Roads. See RURAL MARKET ROADS.	
Massachusetts, motor tax schedule applied to Ontario motors	25, 106
Massachusetts, Highway Organization in	118-123
Medical men, number of motors in Ontario owned by	25, 102
Meeting—See HEARINGS.	
Merritt (joint) petition of village of	66
Metcalf Road, traffic census on	93
Michigan, Highway Organization in	135-138
Middlesex County, resolution of	54, 55
Middlesex County, increase of land values in	204
Middlesex County, ratio of sale values to assessment figures in	210, 211
Mileage of township roads in Ontario; of County Roads	8, 29
Mileage of rural mail delivery in Ontario according to county	111, 113
MILEAGE TABLES (ROAD), (<i>Appendix</i>)	76-86

	PAGE
Miller (Dr. W. G.)	222
Mining interests in Canada; annual production in Ontario of.....	33, 34
MINISTER, relation of Advisory Commission to; head of Highways Department	7, 9, 10, 19, 20, 27
Minister (Deputy), <i>See</i> DEPUTY MINISTER.	
Minnesota, Highway Organization in	139-141
Money By-laws, resolution concerning	60
Montana, Highway Organization in	158-160
Montreal-Toronto Road, <i>See</i> Toronto-Montreal Road.	
Motive power, Ontario motors according to	102
MOTOR, problem created by; effect upon highways of; opportunities presented by; influence of city and area of food supply extended by; wear of road contributed by factors other than; use in co-operative marketing by farmers of	7, 8, 13, 14, 16, 22, 25, 34, 37, 38
Motor, form of wealth suitable for taxation for road improvement.....	24
Motor Associations, resolutions of	70, 71
Motor cycles, tax schedule for	24
Motor cycles, number of licenses in Ontario (1913).....	104
Motor fees to supply one-half Provincial aid for interurban roads.....	29
MOTOR REGISTRATION IN ONTARIO, 1913, (<i>Appendix</i>); number of motors licensed, etc.	25, 100-107
Motor revenue, on basis of recommended schedule and others in use elsewhere; capitalization thereof	24-27
Motor revenue, statement of (1903-1913)	105
Motor survey of principal roads, 1914	10, 27
MOTOR TAX, not a punitive measure; schedule recommended; extra-Provincial licenses to be subject to reciprocal arrangements; schedules in use elsewhere	24, 25, 106, 107
Motor tax, resolutions in favour of	51, 52, 54, 55, 57, 59, 61, 63-66, 70, 71
Motor tax, evidence given concerning	73
MUNICIPAL AND OTHER RESOLUTIONS PRESENTED TO THE COMMISSION, (<i>Appendix</i>)	50-71
MUNICIPAL ACT, resolutions in favour of amendment.....	52, 71
MUNICIPAL CONTROL of highways and expenditure therefor, resolutions in favour of	51, 54, 62, 63
Municipal control (with appointment of municipal commission), resolutions in favour of	51, 54, 71
Municipal Drainage Act, resolutions concerning	52, 56
MUNICIPAL ELECTIONS and highway policy; two-year term of office recommended for councillors, or special designation of candidates	18
Municipal elections, resolution and evidence given concerning	71, 74
Municipal (and school) taxes of townships, 1900, 1905, 1910.....	228-263
Muskoka District, tourist road and traffic through.....	23, 74
N.	
NARROW TIRES, abrasion of road surface by; where permanent roads, light tax upon	13, 25
Narrow tires, resolutions against	52, 53, 64, 71
Narrow tires, evidence given concerning	74
National function of interurban roads	24
Nelson Township, resolution of	62, 63
New Brunswick, Highway Organization in	115, 116
New Hampshire, motor tax schedule applied to Ontario motors.....	25, 106
New Hampshire, Highway Organization in	157, 158
New Jersey, Highway Organization Chart (fig.).....	159
New York City, cost of distribution of farm produce to consumers in.....	37, 38
New York State <i>vs.</i> Ontario <i>re</i> area, population and resources; contribution to permanent highways by cities and towns in	9, 24
New York State, motor tax schedule applied to Ontario motors	25, 106
New York State, Highway Organization in; (and fig.).....	19, 123-128
Non-residents, use of interurban roads by	23
<i>See also</i> Tourists.	
Norfolk County, resolution of	55, 56, 61
North Dakota, Highway Organization in	151
Northern Ontario, summer resorts and tourist traffic to	23
Northumberland and Durham Counties, toll roads remaining in	221
Nova Scotia, two-year term of office for municipal councillors in.....	18
Nova Scotia, Highway Organization in	115

PAGE

O.

Oakville, resolution of town of	66, 67
Oakville Board of Trade, resolution of	69
Occupation, owners of motors in Ontario according to	102
Ohio, Highway Organization in	132-135
ONTARIO compared with New York State, England and Wales <i>re</i> area, etc.; revenues of; municipal elections in	9, 11, 18
Ontario County, resolution of	56, 57
Ontario Associated Boards of Trade; and resolution of	36, 69, 70
Ontario Good Roads Association; and resolution of	18, 27, 71
Oregon, Highway Organization in	161, 162
Organization for work during 1914	27
<i>See also</i> HIGHWAY ORGANIZATION.	
Orillia-Barrie Road, <i>See</i> Barrie-Orillia Road.	
Oshawa, (joint) resolution of town of	64
Ottawa, number of motors owned in	102
Ottawa, summary of evidence given at hearing of commission at	72-75
Ottawa, estimated supporting area of	109
Ottawa-St. Lawrence (or Prescott) Road, investigation and survey of	10, 27
Ottawa-Prescott Road, resolution concerning and grant asked for	71, 75
Ottawa-L'Orignal Road, grant asked for	75
Ottawa-Valley Motor Car Association, resolution of	70, 71
Owen Sound Road, traffic census on	94
Oxford County, increase of land values in	204

P.

Paish (Sir George) opinion of	33
Parcel post and good roads	34, 111
Parks (Prof.)	222
Parry Sound District, tourist road and traffic in	74
Passengers, transportation by motor of	8
Pathmasters to be displaced by permanent township foremen as condition of Pro- vincial aid to township	15
Pathmasters, number in each township of (1913)	188-199
Peel County, increase of land values in	204, 205
Penetanguishene Road— <i>See</i> Barrie-Orillia Road.	
Pennsylvania, Highway Organization in	128-132
PERMANENT ROADS, efficient maintenance of; bond issues for and annual ex- penditure on; light tax upon havey narrow-tired vehicles using; inspection by highways department during progress of construction of ...	9, 13, 14, 17, 18, 25, 26 28, 29
Permanent Roads, proposed classification of; (and fig.)	28, 29
Perth County, increase of land values in	205
Philadelphia, cost of distribution or farm produce to consumers in	37, 38
Physicians, <i>See</i> Medical men.	
Policy, <i>See</i> HIGHWAY POLICY.	
Ponton, (Col. W. N.) opinion of	36
POPULATION of Ontario, England and Wales, New York State	9, 11
Population of Ontario, rural <i>vs</i> urban	33
Population, apportionment to townships on basis of; (assessed) of townships	15, 228-263
Population, a factor in classification of roads	24
Population, increase and decreases in Ontario (1901-1911)	11
POPULATION, URBAN MUNICIPALITIES ARRANGED IN ORDER OF DEN- SITY OF, (<i>Appendix</i>)	223-227
Port Dalhousie, (joint) petition of village of	66
Port Hope (joint) resolution of town of	64
Port Hope Gravel Road, traffic census on	92
POSTAL ROUTES (<i>Appendix</i>) according to counties	111-113
Post Offices, number according to township of	77-86
Preliminary investigations	7, 10
Prescott-Ottawa Road, <i>See</i> Ottawa-St. Lawrence, Ottawa-Prescott Road.	
Prince Edward County, increase of land values in	205
Prison Labour for highway work, resolution in favour of	60
Prizes for highway suggestions and for best statement as to road haulage	21, 38

	PAGE
Problems connected with good roads	7-9, 11, 20, 24
Producer, intercommunication facilities between consumer and	26
PRODUCTION (FARM), good roads to increase area of; cost of; specialization in	34, 108, 109
Productivity of land, a factor in highway classification	12
See also FARM PRODUCTION, AGRICULTURAL PRODUCTION.	
Professional men, number of cars owned in Ontario by	102
Profits per acre increased by widening of suburban area	22
Profits of retailers	37, 38
Property owners and holders, use of rural market and township roads by	12
See also FRONTAGE TAX, Non-residents.	
PROVINCIAL AID recommended for suburban, interurban, rural market and main township roads	9, 14, 15, 17, 29
Provincial Aid (increased), resolutions in favour of	51-66, 68, 70, 71
Provincial Aid asked for particular roads	74, 75
Provincial Aid, evidence given concerning	73
Provincial control of highways, advantages and disadvantages of	21
Provincial function of interurban roads	24
Public to be supplied with information as to costs and expenditure	17
PUBLIC ROADS AND HIGHWAYS COMMISSION, date of appointment; a temporary body	7
PUBLIC ROADS AND HIGHWAYS COMMISSION, FINDINGS AND RECOMMENDATIONS OF (<i>Appendix</i>)	1-29
Public service by commissions in the United States	18, 19
Public utilities, question as to taxation of	25
Public Works Department, resolution concerning regulations of	54, 55, 71
Puslinch Township, resolution of	63

Q.

Quebec, two year term of office for municipal councillors in	18
Quebec, Highway Organization in	114, 115
Queenston-Grimsby stone road, petition concerning	66
Queenston-Grimsby stone road, government maintenance asked for	75

R.

RAILWAYS vs highways and motors; highway classification to take into account construction of; question of taxation of; haulage of freight by water vs. ..	8, 12, 25, 33, 37
Railways (taxation of) resolutions in favour of	51, 52, 61, 71
Railways (taxation of), evidence given concerning	74
Railways (steam and electric), mileage of (total and according to townships and counties) ..	76-86
Rates for highway expenditure, annual and per head	9
Reach township, (joint) resolution of	64
Reciprocity in extra-provincial motor licenses	24
RECOMMENDATIONS AND FINDINGS OF THE COMMISSION	1-29
Recommendations of the Commission (summary of)	26, 27
Reeve, Deputy Reeve, See MUNICIPAL ELECTIONS.	
Registration of motors, See MOTOR REGISTRATION.	
Reinecke (Mr. L.)	222
Repairs, See MAINTENANCE.	
Residents, owners of motors in Ontario according to; motor tourists according to ..	102, 104
RESOLUTIONS PRESENTED TO THE COMMISSION, MUNICIPAL AND OTHER (<i>Appendix</i>)	50-71
Resources of Ontario, present and future	9
Resorts of Northern Ontario	23
Retailers, profits of	37
Responsibility of Minister to people; of local highway authorities	19-21
Revenue of Ontario, 1900, 1914; for highways, to be supplemented by bonds	9, 17
ROAD DEVELOPMENT IN ONTARIO, HISTORICAL SKETCH OF (<i>Appendix</i>) ..	167-187
Road Divisions, number in each township of (1913)	188-199
Road Expenditure, See EXPENDITURE ON ROADS AND BRIDGES.	
ROAD MATERIAL, NOTE ON REPORT ON LOCATION OF (<i>Appendix</i>)	222
Road Material, available supplies of	10

	PAGE
ROAD IMPROVEMENT AND LAND VALUES (<i>Appendix</i>); returns received from farmers	200-207
ROAD MILEAGE TABLES (<i>Appendix</i>)	76-86
Rural vs urban population of Ontario	33
RURAL COMMUNITIES (AND VILLAGES), return of population to; benefited by good roads; co-operation of cities with	7, 33, 34, 40
Rural mail delivery, revenue and mileage of	111-113
Rural communities (and villages), number of motors owned in	25, 102
RURAL MARKET ROADS, control to rest with County Council or permanent county commission; to be supported by the county and by provincial aid	14, 29
Rural roads (present), condition of; traffic census on	12, 92-94
See also GOOD ROADS, HIGHWAYS, PERMANENT HIGHWAYS; COUNTY, INTERURBAN, RURAL MARKET, TOWNSHIP, and TRUNK ROADS.	

S.

St. Lawrence-Ottawa Road, <i>See</i> Ottawa-St. Lawrence Road.	
St. Lawrence River Road, traffic census on	93
St. Thomas-London Road, <i>See</i> London-St. Thomas Road.	
Sale values, ratio of assessment figures to	26, 209-214
Saskatchewan, Highway Organization in	116, 117
Scenery as an asset to Ontario	23
School Taxes, <i>See</i> Municipal Taxes.	
Seating capacity of motors, <i>See</i> Capacity (seating).	
Self-propelled vehicles, <i>See</i> MOTOR.	
Settlement, good roads and future	20
Share-holders of corporations, regard to be had to rights of	25
Side roads, <i>See</i> TOWNSHIP ROADS.	
Simcoe County, increase of land values in	205
Skelton (Prof. O. D.)	187
Social development of Ontario, assisted by good roads	34
Specialization in farm production	109
Speed of traffic to be considered in suburban road standards; taxation of motors according to	22, 25
Standards for various kinds of road, according to traffic and other requirements	8, 10, 14, 22
State Highway Commission, <i>See</i> ADVISORY COMMISSION, United States, and under name of State	
Statist (The London), article in	33
STATUTE LABOUR, abolition or commutation, a condition of provincial aid to townships	15
Statute Labour, resolution in favour of abolition of	64
Statute Labour, evidence given concerning	72
Statute Labour and commutations according to townships (1913)	188-199
Steam, number of Ontario motors driven by	102
Steam railways, <i>See</i> RAILWAYS.	
Stock, Hay and Pasture, variations in (1903-1913) (fig.)	49
Stone roads, mileage of improved (total and according to townships)	76-86
Stormont, Dundas and Glengarry, (United Counties of) resolution of	57
SUBURBAN AREAS, increased farm production and profits within; determination about cities of; support by city of roads within; "supporting areas" extreme standard of measurement of	14, 20, 22, 27, 35, 108
SUBURBAN ROADS, selection and control of; support by city of; local improvement tax for; special standard for; city functions of	8, 13, 14, 23, 35
SUMMARY OF EVIDENCE PRESENTED TO THE COMMISSION (<i>Appendix</i>)	72-75
Summary of Commission's recommendations	26, 27
Summer resort, <i>See</i> Resorts.	
Supplementary Revenue Act, resolution concerning	52
SUPPORTING AREAS OF ONTARIO CITIES (<i>Appendix</i>)	108
<i>See also</i> SUBURBAN AREAS, FARM PRODUCE, etc.	
Survey (motor), <i>See</i> Motor Survey.	
Sydenham Road, traffic census on	94

T

Talbot Street, grant asked for	75
Talbot Street, traffic census on	91
Tax (frontage), <i>See</i> FRONTAGE TAX.	

	PAGE
TAXATION methods and the highway situation; need for equitable.....	8, 24-26
See also MOTOR TAX, ASSESSMENT, RAILWAYS, Municipal (and school) taxes.	
Taxicabs and sight-seeing cars, number in Ontario of.....	102
Technical policy, See HIGHWAY POLICY (TECHNICAL).	
Tenure of office, See MUNICIPAL ELECTIONS.	
Tilsonburg-London Road, See London-Tilsonburg Road.	
TOLL ROADS (<i>Appendix</i>).....	221
Toll Roads, methods of purchase; condition under township control.....	13, 16
Tonnage, motor trucks in Ontario according to	101
Toronto, summary of evidence given at hearings of Commission at	72-75
Toronto, number of motors owned in (1913)	102
Toronto (and other cities), estimated supporting area of	109, 110
Toronto-Hamilton Road, investigation and survey of (1914).....	10, 27
Toronto-Hamilton Road, resolutions concerning	53, 63, 65, 66, 69
Toronto-Hamilton Road, grant asked for	75
Toronto-Montreal Road, grant asked for	75
Toronto National Exhibition	21
Toronto Township, resolution of	64
TOURIST, importance to community of money spent by; trade from the United States; roads through Northern Ontario for; agricultural needs of Province to be considered before	23
Tourist motor licenses (1913) according to months of issuance; number of (1906, 1913)	104, 105
Tourist road (from Severn Bridge to North Bay), government construction and maintenance asked for	74
TOWNS, number of motors owned in	102
Towns (not separated from county) and villages, resolution in favour of inclusion in County Road System of	53, 55, 56, 61
Towns (separated from county), See CITIES.	
TOWNSHIPS, control of local township roads by Councils; assessment for roads and bridges; present control of toll roads by; expensive bridges maintained by; sufficient proportion of suburban road expenditure already paid by	14, 16, 18, 23
Townships, resolution in favour of aid to	64
Townships, road and railway mileage; number of post offices according to (1913).	77-86
Townships, statute labour commutation; road and bridge expenditure according to (1913)	188-199
Townships, road expenditure by (1900, 1905, 1910).....	228-263
TOWNSHIP ROADS, proper standard for; conditions of aid and apportionment thereof to; permanent township foremen and highway organization for; examination of main.	8, 10, 13-16, 27
Township Roads, traffic census on (1913).....	95-99
TOWNSHIP ROADS, STATUTE LABOUR AND EXPENDITURES (<i>Appendix</i>)	189-199
TRADING CENTRES, access of farmer by county road to	8
TRADE (Boards of), opinions of officers of.....	36
Trade (Boards of), resolutions of	68-70
TRAFFIC, road standards to be in accordance with requirements of; various kinds on interurban roads; results of mixed horse-drawn and motor; percentage carried by important roads of each county	8, 13, 16, 23, 25, 29
Traffic census already begun; to be continued 1914 in connection with classification of roads	10, 24, 27
TRAFFIC CENSUS TABLES (<i>Appendix</i>)	87-99
Transportation, revolution in methods of; of workers into country.....	7, 22
See also MOTOR, RAILWAYS.	
Trenton Bridge, government maintenance asked for.....	75
Trent Region, tourist traffic in	23
Truck, See MOTOR.	
TRUNK ROADS (Provincial System of), resolutions against.....	51, 62, 63
Trunk Roads, resolutions in favour of	56, 57, 61, 62, 65, 68, 69
Trunk Roads, evidence given concerning	72-74
See also RURAL MARKET ROADS; INTERURBAN and SUBURBAN ROADS, etc.	
TRUSTEES (Boards of) for Suburban Roads	13, 26

U.

United States, co-operation of central government in; highway administration by commissioners in; direct taxation in; taxation of corporations in; tourist traffic from	16, 18, 19, 23, 225
United States, number of motor licenses issued (1913) to residents of.....	104
United States, Highway Organization in	118-166
United States Office of Public Roads	222
Unsurfaced Roads, <i>See</i> TOWNSHIP ROADS, Earth Roads.	
Upkeep, <i>See</i> MAINTENANCE.	
Urban <i>vs.</i> rural population of Ontario	33
URBAN MUNICIPALITIES ARRANGED IN ORDER OF DENSITY OF POPULATION (<i>Appendix</i>); acreage of.....	223-227

V.

Vehicles, <i>See</i> NARROW TIRES, Motor, Horse-drawn Vehicles.	
Vermont, Highway Organization in	162, 163
Victoria County, statement and resolution of.....	58
Villages, facilitation of main road construction through.....	18
<i>See also</i> RURAL COMMUNITIES.	

W.

Washington, Highway Organization in	163-166
Water, haulage of freight by railway <i>vs.</i>	37
Waterloo County, resolution of	59
Waterloo County, increase of land values in	206
Waterloo County, ratio of sale figures to assessment figures in.....	212
Welland County, (joint) resolution of	61
Wellington County, resolution of	59, 60
Wellington County, increase of land values in	206
Wentworth County, resolution of	60, 61
Wentworth County, increase of land values in	206
Wentworth County, ratio of sale figures to assessment figures in.....	212-214
Wide tire regulations, <i>See</i> NARROW TIRES.	
Williams (Mr. M. Y.)	222
Williamsburg Township, resolutions of	64
Wisconsin, Highway Organization in	142-146
Whitby, (joint) resolution of town of	64
Work recommended to be undertaken, 1914; 1915-1930	26, 27
Wyoming, Highway Organization in	166

Y.

Yonge Street, traffic census on	88
York County, resolution of	61
York County, increase of land values in	207
York County toll road remaining in	221



VALUE OF PRODUCE
In Dollars per Acre



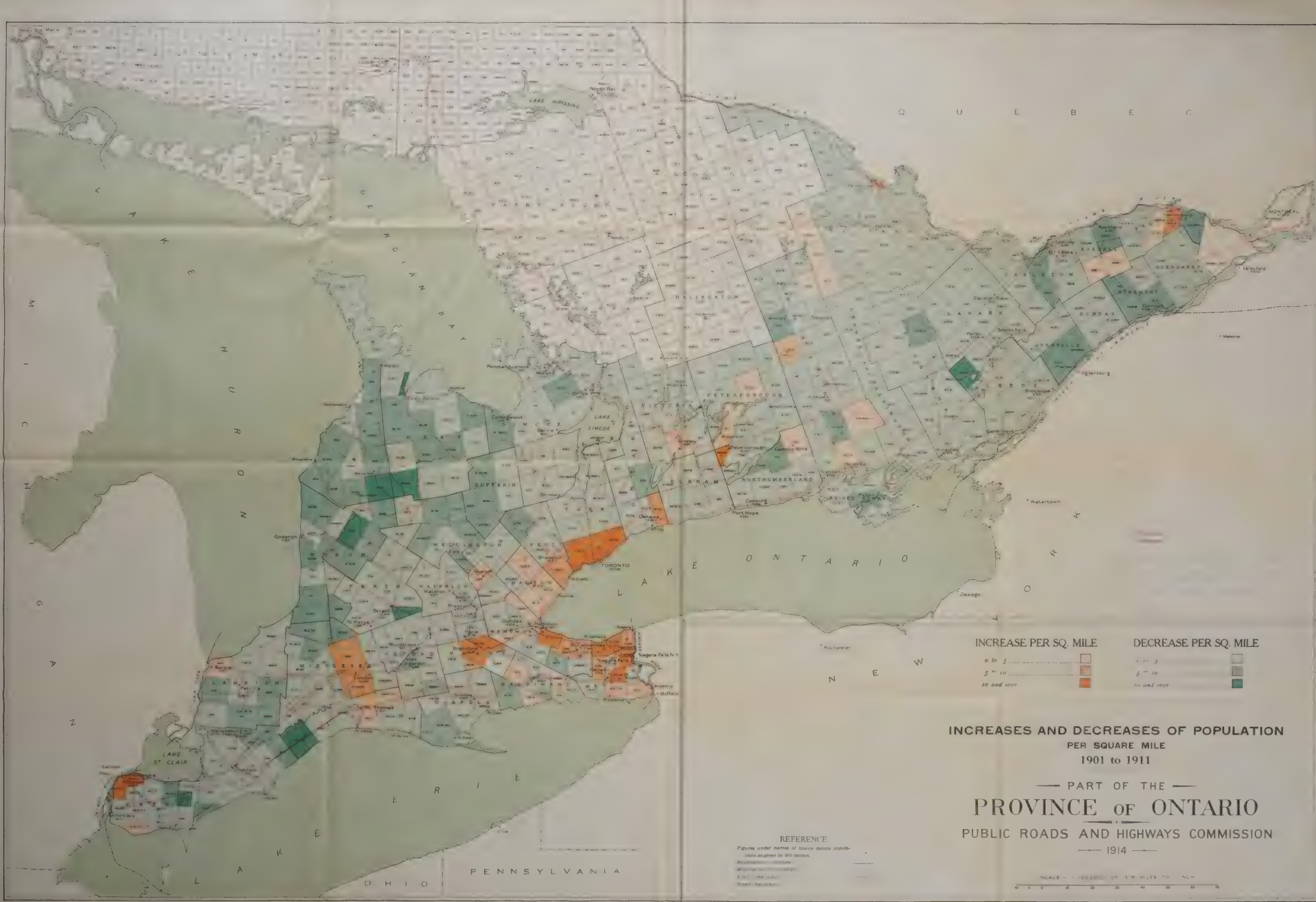
DISTRIBUTION OF AGRICULTURAL PRODUCE
1911

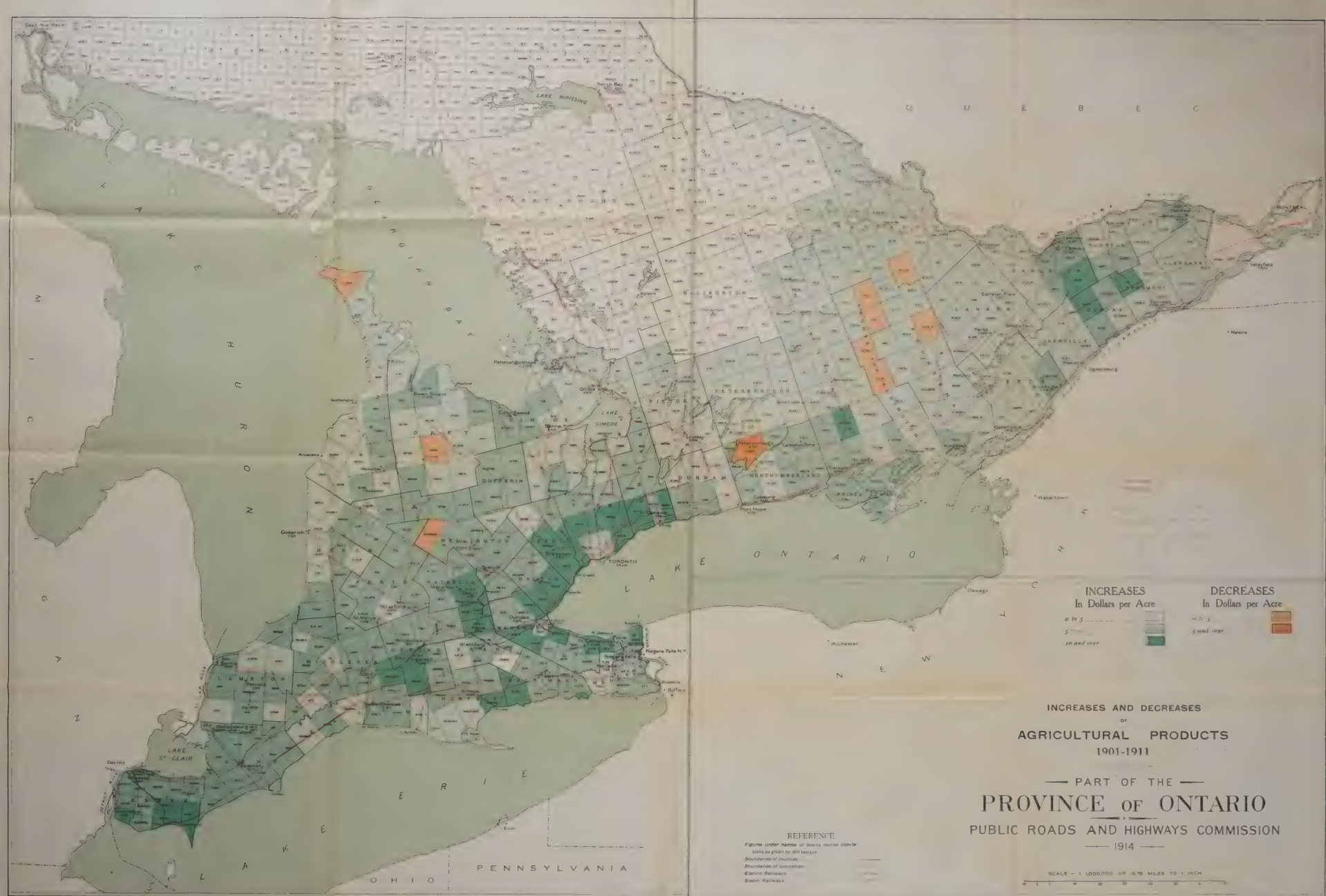
— PART OF THE —
PROVINCE OF ONTARIO
PUBLIC ROADS AND HIGHWAYS COMMISSION
— 1914 —

REFERENCE

Figures under names of towns denote population as given by 1911 census.
Boundaries of counties.
Boundaries of townships.
Electric Railways.
Steam Railways.

SCALE — 1 INCH = 100,000 FEET OR 15.75 MILES TO 1 INCH





Copyright 1854
Printed by J. H. Colver
New York



